CAPE PACK 2.13

Quick Start Guide

Presented by:

CAPE SYSTEMS | Esko
100 Allentown Parkway, Suite 218
Allen, TX 75002
888-387-0485 or 800-229-3434, ext 24
FAX 989-681-6260
Support.cape@capesystems.com

Copyright Notice

Correspondence regarding this publication should be forwarded to:

Esko Software BVBA

Kortrijksesteenweg 1095

B – 9051 Gent

info.eur@esko.com

Table of Contents

Installing CAPE PACK

System Requirements

CAPE PACK runs on Microsoft Windows 98/ME/2000/2003/XP/XP Pro, NT, Vista, Windows 7 and Windows 8. To install this program in any NT-based system, you must have ADMINISTRATIVE PRIVILEGES/RIGHTS.

To run the program, you will need the following:

Computer set up	**Windows operating systems**
CD ROM Drive	CAPE PACK is normally supplied on a CD or internet download link.
Processor	A Pentium processor.
Windows Client	When running CAPE PACK on a single PC you must run with Microsoft Windows 7 (32/64 bit) or Windows 8 (32/64 bit), Windows XP SP3 (all editions except Starter Pack) or Vista (32/64 bit).
Windows Server	When running CAPE PACK on a server you must run with Windows 2008 (32 bit), Windows 2008 R2 (64 bit) or Windows 2003 (32/64 bit). CAPE PACK is Citrix compatible. CAPE PACK also runs on other Terminal Servers.
Colour Graphics	Your computer must have colour graphics capability. CAPE PACK requires a minimum screen resolution of 800 x 600 to take full advantage of the powerful colour graphics.
Printers	CAPE PACK will, through Windows, support most graphics capable printers.
RAM	CAPE PACK requires that your computer have at least 64 Mbytes of RAM.
Hard Disk	CAPE PACK will occupy approximately 200 Mbytes of space on your hard disk for program storage. Additional space will be needed as you add data files and save Solution/Graphics files.

Installation Options

You can install your software in one of two ways.

- **Central Location Setup**: Installs all of the CAPE PACK files to one location on either the hard drive of your computer or on a specified network drive.

- **Client/Server Setup**: Installs the main program files on your local hard disk. The remaining common program files and software licensing are located on a specified network server. This option is provided to optimize loading and response times on network servers. Because the main programs are being run directly from the hard drive, the program responds much faster over a network

Note: The Client/Server option is provided to deal with the issue of programs operating slowly on network servers due to the amount of traffic on the network at any one time. Using this installation option locates the main programs to your local hard disk and therefore allows the CAPE PACK programs to work much faster.

UNLESS YOU ARE USING UNC'S FOR YOUR INSTALLATIN PATH, IT IS HIGHLY RECOMMENDED THAT YOU INSTALL THE PROGRAM USING A CLIENT PC RATHER THAN A NETWORK TO PERFORM NETWORK INSTALLATIONS. PATHING FILES ARE ESTABLISHED DURING THE INSTALLATION PROCESS AND DRIVE LETTERS WILL NOT BE CORRECT UNLESS A CLIENT PC IS USED.

Installing the Program

Insert the CAPE PACK CD into your CD tray and close it. The CD Browser will start.

Select Install Software.

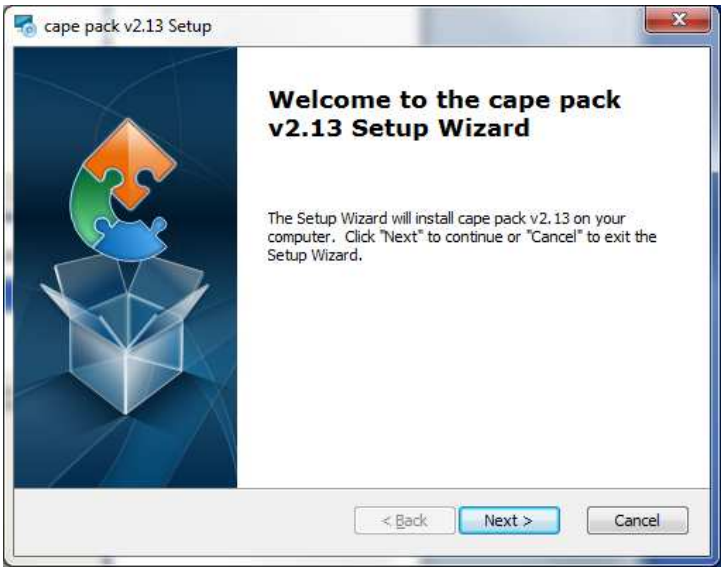
You have two options for installing CAPE PACK 2.13

If you choose the **Install US Version**, you will have a choice between US England or Spanish with inches/pounds measurements as default, and with the North American Compression Strength program. If you choose this option, you can switch to one of the other program languages after installation. You can also setup your program groups to work in metric as default.

If you choose the **Install Metric Version** option, you can choose which language to install with (Euro English, Spanish, French, German or Swedish), but the program will install using Metric units of measure and the European Compression Strength Program.

If you wish to install the Metric version, please find the Installation and Network Administration.pdf file on your Application CD in the Documentation\English (European) folder for further installation instructions. The instructions in this manual are for the US Version.

Click on **Install US Version**. The CAPE PACK installation program will automatically appear.



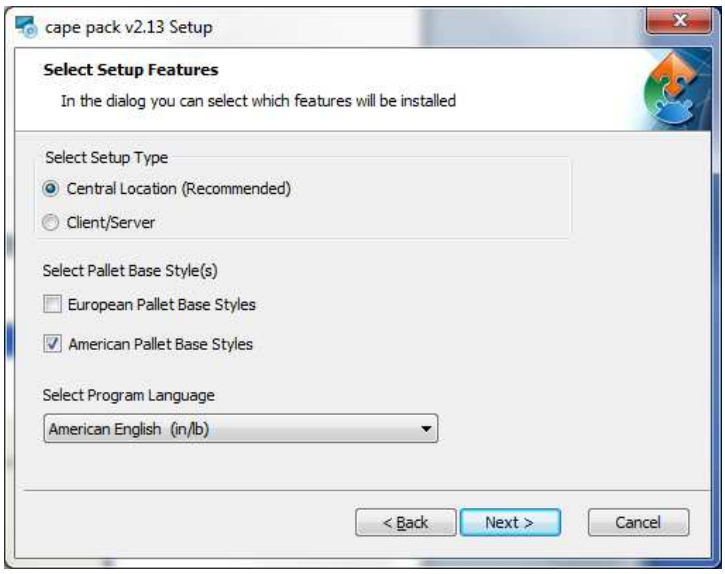
Click on **Next**. and you will see the **cape pack v2.13 Setup** screen.. Here you have three options:

- **I am installing CAPE PACK on this computer for the first time. (New Installation)**
- **I am upgrading an older version of CAPE PACK on my computer. (Upgrade)**.
- **I am reinstalling CAPE PACK on my computer. (Reinstall)**

New Installation

- Select **I am installing CAPE PACK on this computer for the first time. (New Installation)**

Accept the default folder, and then click on **Next.** You will see the following screen.



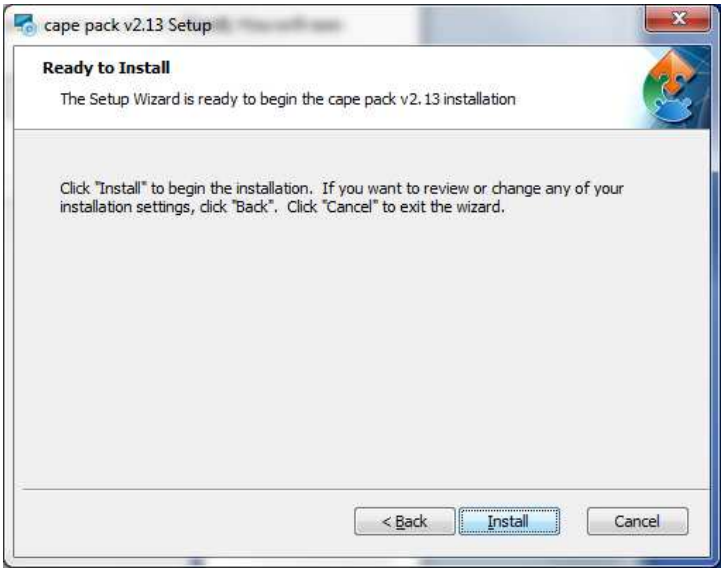
This screen allows you to choose your Setup Type, the Pallet Styles you want to install and the Program Language you prefer.

Select **Central Location Setup** for a full network installation or a PC installation. **Select Client/Server Setup** to install licensing and common files to the network and the main program files to your hard drive. Make your choice and click on **OK**.

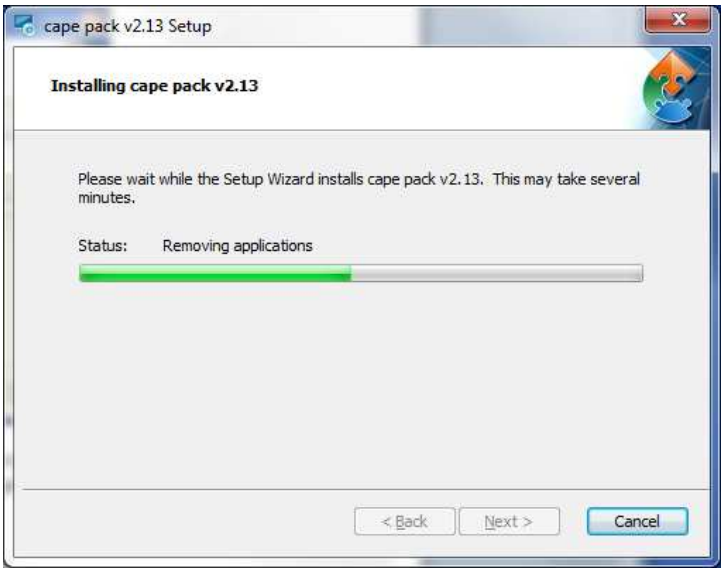
Choose either **Eurpoean Pallet Base Styles**, **American Pallet Base Styles** or both.

Select either **American English** or **Spanish** Program Language.

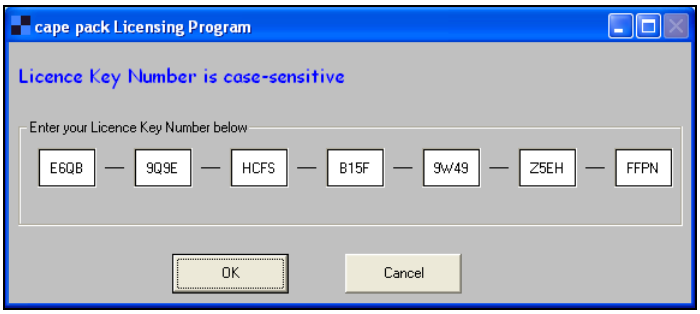
Click on **Next** and you will see the following screen.



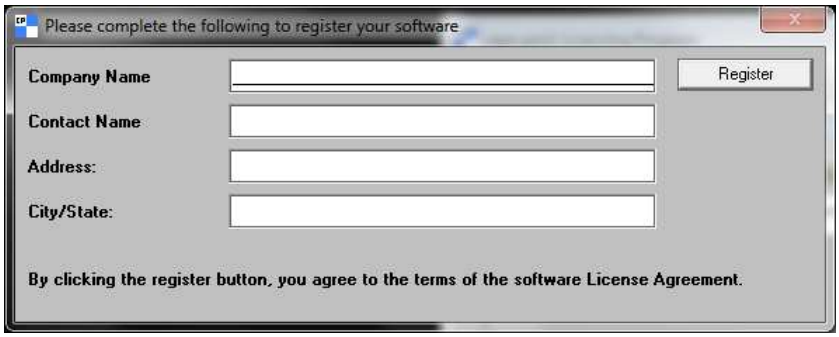
Click on **Install** to begin the installation. The installation process will begin. This could take several minutes and you will see progress screens during the process.



Once the Windows files have been registered you will be asked to enter your License Code that was supplied with your program. **The License Code is Case-Sensitive.** Enter your supplied code and hit **OK.**



Next you will be prompted to enter details about your company's name and address. You must complete these details. Then click on **Register**.



When all the files have been installed you will see this screen.

Click on **Finish**.

The installation will create a shortcut on your desktop for CAPE PACK and add it to your Start menu.

To close your CD Browser program, click on the **Back** button. Then click on **Exit** and the browser will close.

Note: Remove the CD from your PC and keep in a safe place.

Network Server Installations

UNLESS YOU ARE USING UNC'S FOR YOUR INSTALLATION PATH, IT IS HIGHLY RECOMMENDED THAT YOU INSTALL THE PROGRAM USING A CLIENT PC RATHER THAN A NETWORK TO PERFORM NETWORK INSTALLATIONS. PATHING FILES ARE ESTABLISHED DURING INSTALLATION PROCESS AND DRIVE LETTERS WILL NOT BE CORRECT UNLESS A CLIENT PC IS USED.

Once you have installed the program to the server you will need to register a range of system files in the Windows Registry for each workstation that is going to run CAPE PACK.

On each workstation, open your Windows Explorer and go to the CAPE213 folder.

Locate the file called **Client.Exe**. Double-click on this file and it will automatically install and register these files in the Windows Registry. It will also add the CAPE PACK program shortcut to your Desktop.

You are now ready to run CAPE PACK on the workstation.

If you are installing your program to a network server, please refer to the chapter entitled *Network Administration*.

Technical Support

Technical Support for your program is available by telephone, email and fax.

Our Help Desk can be reached Monday through Friday between 8:00 a.m. and 5:00 p.m. Eastern Time by telephone at 888-387-0485 or Central Time at 800-229-3434, or by Fax at 989-681-6260 or 972-359-1106. International customers can reach us by phone at 989-681-3540 or 972-359-1100.

Or you can email the Help Desk at support.cape@esko.com

Introducing CAPE PACK Version 2.13

Introduction

CAPE PACK is a 32-bit, standard Windows convention program that has been designed to operate in a similar style to other programs, such as Microsoft Word. The program is easy to use with pull-down menus, toolbars and tabbed data input screens.

Like Word, CAPE PACK is a comprehensive system, catering to a wide range of needs. We understand that not everyone will want to use all of its features at first. However, a lot of people will grow to use many parts of the program over a period of time. So, don't be overwhelmed by every feature or option that is available in the program. Just concentrate on the features you want to use for your own circumstances. Like any large system, the finer points can be learned as and when you need them or when you have the time to experiment.

The basic style of CAPE PACK will be maintained for the foreseeable future. Therefore, as new versions are released you will not have to completely retrain yourself.

CAPE PACK is a group of programs designed to help you solve most of your packaging problems.

- What is the best way to load this product onto a pallet?
- How do I design the best size primary pack, case size and pallet load?
- How many boxes can I fit on a pallet?
- How will the pallet load fit in a truck?
- How can I draw all the packaging components and load diagrams?
- Which load is more economical?
- How do I create realistic packaging components for my specifications?
- How can I put surface graphics on my packaging components?
- How can I communicate the results to my colleagues/customers?

By running one or more of the program groups you have the ability to evaluate many different packaging alternatives quickly. You no longer have to sit for hours with paper, pencil and calculator trying to decide how best to load a case, pallet or a truck.

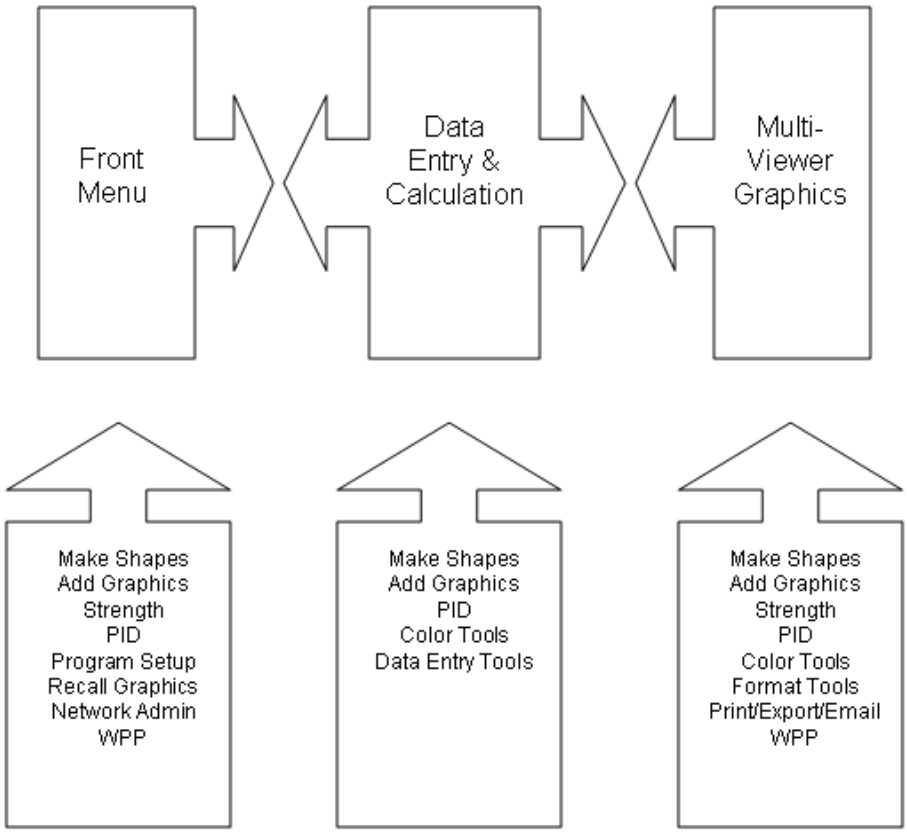
Understanding the Program

The user interface for CAPE PACK provides forward and backward flow. From the Front Menu, you choose a program option, then move forward to the data entry area. Once the data is entered, you move forward again to the Multi-Viewer Graphics portion of the program. From this point you can manipulate your graphics, print, export OR you can move back to the data entry area. The idea is that you step forward and backward through the program refining your analysis, or completing multiple tasks.

At each of the three stopping points in the program, you have the ability to use the accessories, such as the Make a New Shape Feature, Strength or Economic Analysis.

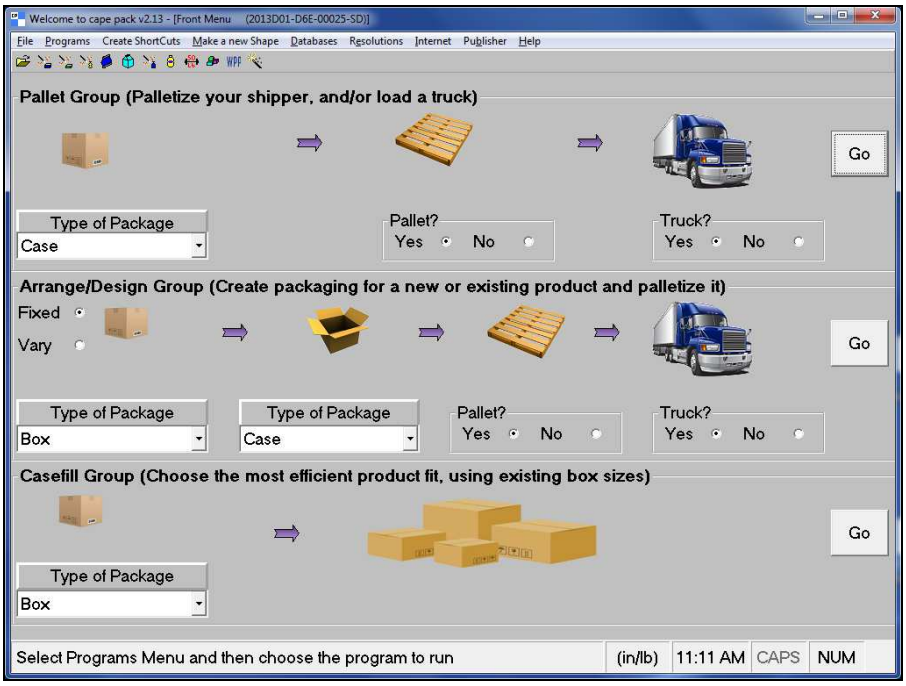
The following flowchart represents the basic flow of the program.

CAPE PACK 2.13 Program Flow



Getting Started

Simply select the package type you need from the drop down lists on the Pallet, Arrange, Design, Casefill or KDF groups on the Front Menu. Then click on **Go** to launch that module.



Or if you have already run one program, you can select a new program from the **Programs** menu on any of the input screens.

Using either of these methods, the program will load with your Default Settings. You then just enter the data you need to change, choose a calculate option and then the program calculates and displays a range of solutions. You then evaluate the different solutions using the on-screen graphics and a number of text reports.

Running an Analysis

Start the program

Start CAPE PACK from your desktop by double-clicking on the icon.

Choose the appropriate program and package type and click on the **Go** button. You move forward to the data entry area with the Default Settings already filled out.

Create Data

Modify your Default Settings with your specific package and loading requirements.

Save Data

Save the data and calculate the results.

Your Default Settings will be maintained, but your data will be saved to filename of your choice. You will then be presented with a range of solutions in the graphics portion of the program.

View the results in Multi-Viewer Graphics.

Evaluate the different solutions, select a solution, and customize your results with screen, layer or object formatting. Then save the graphics for later use.

Share Data

Print or share your results with colleagues/export to other applications/communicate to customers.

From here you can customize the on-screen graphics, print your reports, export solution information to other programs, create web pages OR you can move back to the data entry area and modify/refine the input data to re-run the analysis.

The on-screen graphics allow you manipulate the diagrams to suit your own requirements so that you can save those results, print them, or export them for use in another program application (i.e., packaging specifications, databases or Word documents).

CAPE PACK contains two types of programs: the Analytical programs and the Accessories programs.

Analytical Programs

Use these programs to solve a specific type of packaging design or pallet loading problem.

Pallet Group

If you have a fixed sized object, which you want to load onto a pallet or into a truck, you should run this program to see how that object can be loaded, based on the restrictions you apply. The object can be a rectangle, oval, bag, cylinder or trapezoid, or an object you create within the Make a new Shape feature. You can load the object onto a variety of pallet styles or into a variety of truck styles. Use this program to compare the different alternatives for loading an object onto a maximum of three different pallet sizes.

Display Pallet

If you have different sizes of boxes to load on the same pallet, you would use this program. Once designed, you can then place your loads into a truck. Display Pallet allows you to combine up to 40 different box sizes, with a maximum load of up to 500 boxes. There is also a powerful load editor for fine-tuning your load.

Arrange Group

If you have a fixed-sized product or primary package you need to arrange in a case and then palletize for shipping, you should run this program. You specify the shape and size of the primary package, how many you want in a case and (if required) how it should be bundled in groups. The program will calculate a case size, which it will then palletize. The object of this program is to fit the highest number of primary packages on the pallet, based on the loading restrictions you specified.

Design Group

If you have a new product to design or primary package you need to resize and pack in a case, and then palletize, you should run this program. You specify the shape and size of the primary package, how much the size can vary, how many you want in a case and (if needed) how it should be packed in bundles. The program will then calculate new primary package sizes, a variety of package arrangements and new case sizes, which will then be palletized. The object of this program is to calculate the best primary package size in order to fit the maximum number of primary packages onto the pallet.

KDF Group

These programs are specifically for use by corrugated companies where the user wants to start with either a flat blank of a case or a made-up case (an erected corrugated case). They select a formula and the program automatically converts the flat blank or made-up case dimensions to a KDF (knocked down flat/flat-glued case). They enter a minimum and maximum number of KDFs per bundle and the program creates the bundle size. Finally, they choose a pallet and truck type and the program does the rest.

Folding Carton Arrange (FCA)

The Folding Carton Arrange programs are for building bundles of flat folded cartons, and then arranging these bundles into cases, and then putting these cases onto pallets. There are two modules for new case sizes and 3 modules for existing case sizes. The New Case size options will design you new cases based on your bundle counts and case parameters. The Fixed Case Size options will evaluate your cartons in bundles compared to a database of existing cases.

Casefill Group

If you need to fill an existing case size with a product or primary package, use this program. First, set up a database of case or tray sizes that exist within your operation. Then specify the size and shape of the primary package as well as the cases/trays you want to consider loading. The program searches for the case that yields the best fit. In addition, Variable Casefill will allow for changes in the primary pack size to fit more efficiently in an existing case. This program does not palletize the case because it assumes that the palletization for this case is acceptable to you. Use this program to help in consolidating the number of existing case sizes your company uses. The rule that 20% of the product supports 80% of the business might apply to this analysis.

Accessories Programs

Use these optional programs to enhance or customize your results from the main analytical programs and then communicate them to others.

Sustainability Analysis

Use CAPE’s Sustainability Costing Analysis to evaluate all the financial alternatives for your product and packaging, as well as all the other handling, storage and transportation costs involved in the entire Supply Chain.

Pallet Audit

Pallet Audit has been designed to allow the user to enter very simple input information so the program can create a database of all possible 2 dimensional case footprint sizes, for all CAPE's pallet patterns, on up to four different pallet sizes. The completed Audit Database contains a wealth of information at a glance.

Web Page Publisher

Use this program to create web pages and catalogs that can be uploaded to a web address to provide a single source for your palletizing specifications. You can then allow access to these pages via the Internet anytime day or night by anyone in the world, based on your security settings.

Make a New Shape programs

These programs allow you to create rectangular, cylindrical, trapezoidal, ovals and gable-end shaped packages. Bottles, cans, milk cartons, various bag shapes and sloping sided shapes can also be created.

You can also color either the entire package in one color or different colors for different parts of the package for greater realism. So, a green wine bottle with a red top seal is very easy to create.

You can also create display cases and trays, pallet base styles, pallet crates, pallet blocks, container sizes and pallet bins for use in the analytical programs.

Packaging Information Database

CAPE PACK has a powerful database feature called the Packaging Information Database. This special database allows you to save the information from any solution you create in Pallet, Arrange, Design, KDF or Casefill and then sort, review or group that information. You can even recall your saved graphics from within the database.

Strength

This program calculates the compression strength of a case based on case size, board grades, and environmental factors. The results are calculated using the McKee formula, which is based on strict laboratory conditions. Use Strength to work out how your particular case performs under different conditions.

Add-on Graphics (3D Imaging)

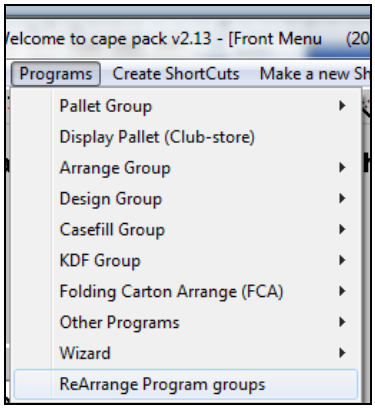
This program allows you to transfer scanned images or artwork files onto the surfaces of the packaging components (primary, tray, secondary package) available in the analytical programs or onto those packages created using the Make a new Shape feature. Full documentation for this program is available on your Application CD in the Documentation folder.

Defaults

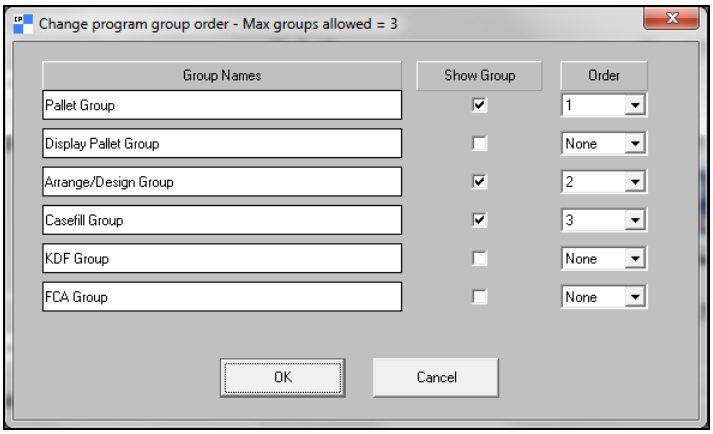
Front Menu

We introduced a way for you to customize the Front menu of your screen to allow any three program groups to appear.

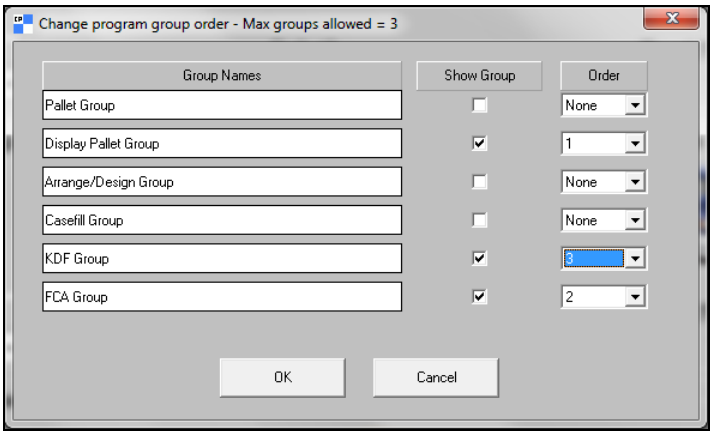
Click on the **Programs** menu and **ReArrange Program Groups**.



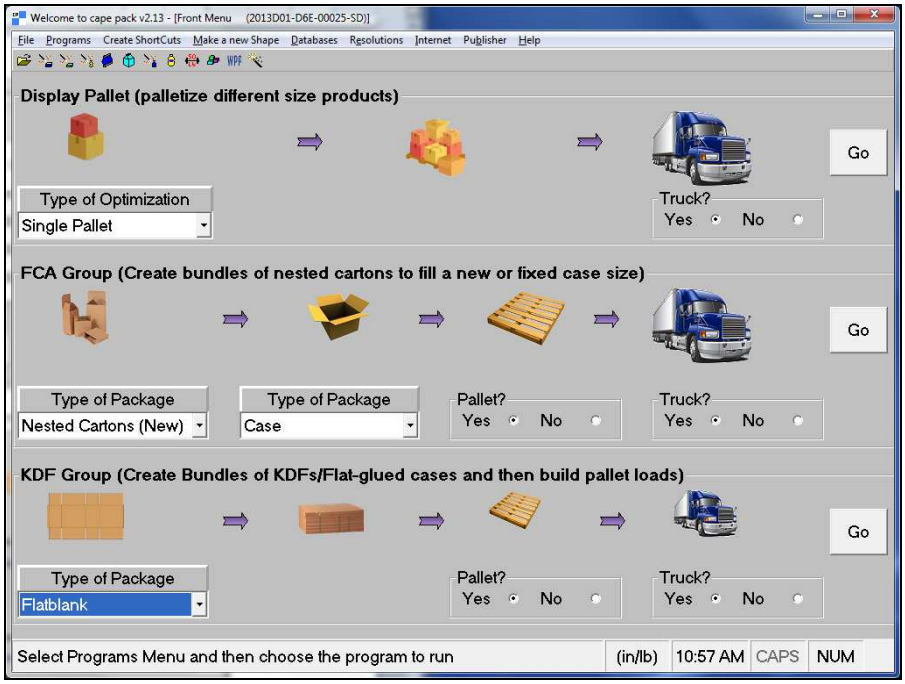
The following screen will appear.



Select the groups you want to appear by clicking on the appropriate check mark in the **Show Group** column, then setup the order you prefer in the order column. Here is an example.



And the results would look like this.



Pallet Group has been replaced with Display Pallet, Arrange and Design Group has been replaced with FCA Group and Casefill has been replaced with the KDF Group. The program will remember these options as your default until you change them.

Default Settings

This is simply your chosen default parameters for the program. Your program is supplied with preset Default Settings. These should be modified to suit your needs and then saved by clicking on **File**, **Save My Default Settings**. These settings are more or less a template or master set of information for the program. Because the program loads these Default Settings automatically, all you need to do is make necessary changes for the particular analysis, enter your product name and product code, and calculate your answers.

For example, if you loaded the Pallet Group for cases, all you might need to do is enter a new case size and weight and then calculate your answers. The pallet information and/or truck information would mostly likely remain the same.

Default Settings are also an easy way for you to see the type of information required by any of the CAPE PACK program modules. They offer an ideal way for you to work with the different program groups and familiarize yourself with the software

and how it works. You can open the Default Settings, change the data and run an analysis. You can resave them, but you cannot create any additional templates.

New Features of CAPE PACK version 2.13

The following is a brief list of the new enhancements made to this version of CAPE PACK. For more information on the features, please refer to the documentation PDF files included on your Application CD.

- We introduced a way for you to customize the Front menu of your screen to allow any three program groups to appear.
- Display Pallet has been written and enhanced. We have updated the algorithm to 32-bit and added an Order Fulfillment option.
- We have added the option of Pallet Displays to your pallet types. Pallet Displays are a regular pallet base style that has a display case or tray secured to the top. This allows stores and discount clubs to use their pallet loads for customer shopping convenience, without having to unload the product from the pallet or case.
- We have added the second page to Multi-Dimensional Analysis export results.
- We have enhanced the rotate layers top to include the top view with dimensional labels.
- Quick Report for Multiple Pallets has been Enhanced. The quick report shows basic information about the loads you have calculated to help you select the best option. When using multiple pallets for your analysis, we have changed the product count from secondary packs to primary packs. This will allow you to quickly see which secondary package the program calculates for you and will give you the best pallet load yield.
- We have added the ability to sort common secondary pack sizes generated by Arrange and Design Group by Primary Packs per Load.
- We have added Lift Covers off Trays for Retail Ready Packaging.
- Blister Pack Enhancements have been added. Formerly, blister packages had 2 limitations. First, they were only allowed to be packed height dimension vertical in the case. And second, if there was room to nest them they were always nested. Both of these limitations have been removed. Here are some examples.
- In the Fixed modules of Folding carton Arrange, we have added the ability to see the cube utilization of the case on your quick report to assist you in selecting the best existing case for your new carton.
- Calculate Solutions with Fixed Primary Pack Volume has been added to the Design Group in addition to changing the volume by percentage.
- With this version of CAPE PACK, we are introducing a new standard report style called New Report Style. You will still have access to the Classic Report Style, but the default will be the new style.
- In this new version of CAPE PACK, you can now save your Compression Strength results to be printed along with your Graphical Solution report.
- Your program will be installed with 7 custom reports ready to use. To see these reports, click on the File menu in Multi-Viewer graphics called Print Custom Report (Word).
- We have added margin settings to enhance our export settings feature.

Pallet Group - Building Pallet Loads

We will be palletizing cases onto 48x40 GMA 4-way pallets and into 40-foot long high-cube trucks. We will also be showing on our report the arrangement of cartons in the case.

You begin by defining the problem—telling the program what you want it to do and what parameters you will use.

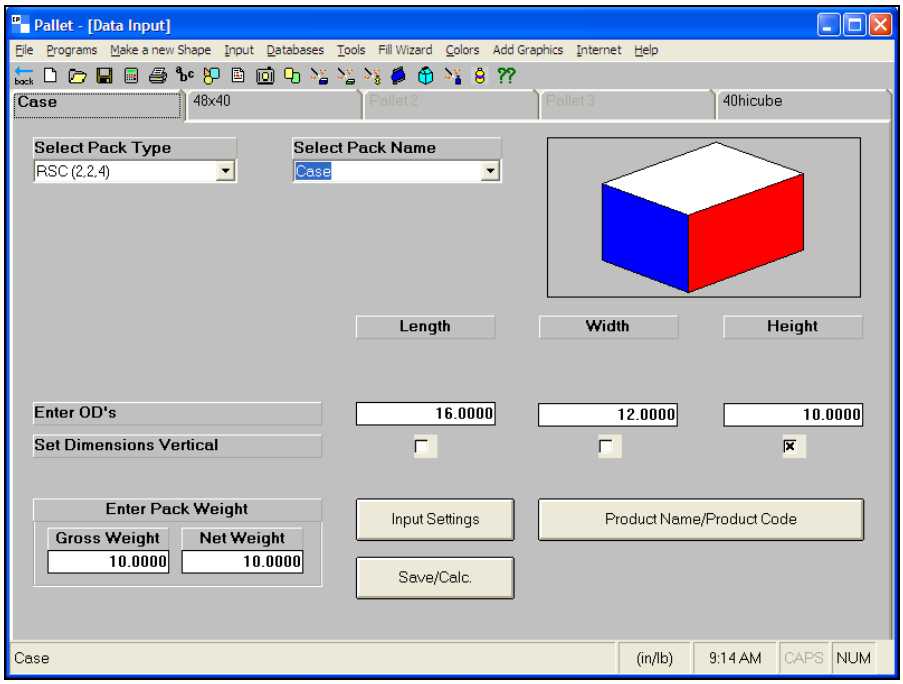
Double click on the program icon on your desk top to launch the program.

We are using the Pallet Group for our first analysis and as you can see there are two options available.

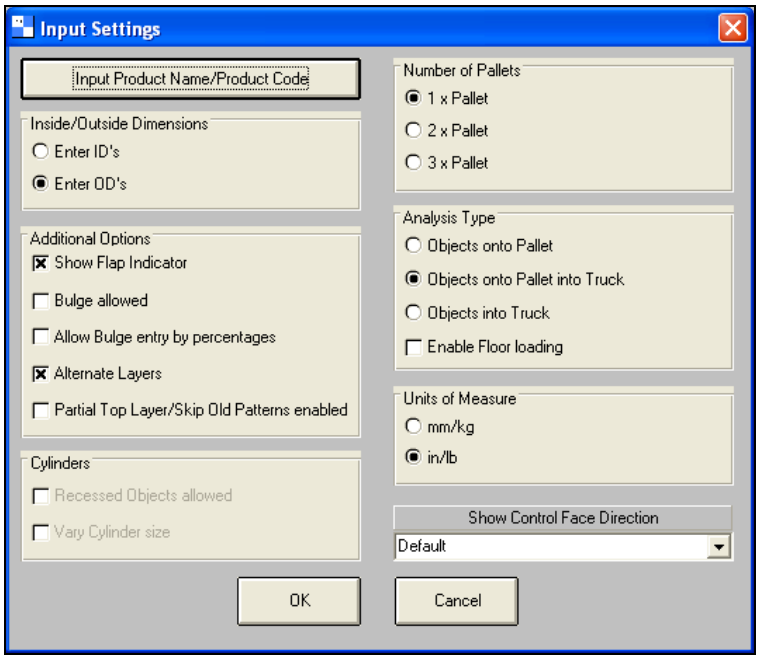
- Single: allows you to build pallet patterns and/or load containers with a fixed size outer pack.
- Mixed: allows you to build special display pallet loads with different products.

We want to put single size cases onto a pallet and then into a truck, we need to use the single option, which is the default for the program.

Select **Case** from the drop down list for the **Pallet Group**, mark **Yes** for Pallet and **Yes** for Truck and then click on **Go**. The first input data screen appears with your default settings already filled in.



Click on the **Input Settings** button**.** The following screen appears.



Mark or turn on the following items:

- **Enter OD's**
- **Show Flap Indicator**
- **Alternate Layers**
- **1 x Pallet**
- **Objects onto Pallet into Truck**
- **in/lb**

Click on **OK**.

Next click on the **Input Product Name/Code** button.

Enter **Widget** in the *Product Name* field.

Enter **062469** in the *Product Code* field.

Click on **OK**.

Now that you have defined the problem, you can begin to input the data.

Case Details

Choose **1: RSC (2,2,4)** from the *Pack Type* field.

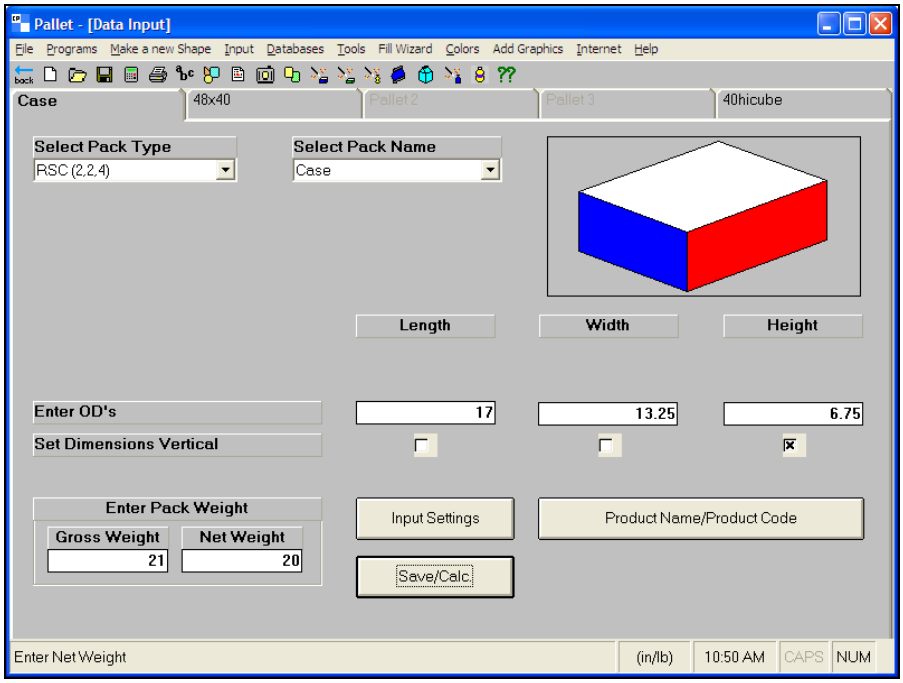
Choose **Case** from the *Pack Name* field.

For the outside dimensions, enter **17**, **13.25**, and **6.75** in the *Length*, *Width*, and *Height* fields respectively.

In the *Dimension Vertical on Pallet* field make sure only **Height** is marked.

Enter **21** in the *Gross Weight* field. This is the weight of the shipping case plus the widgets inside it. It is used in determining any weight restrictions of the load.

Enter **20** in the *Net Weight* field. This is the weight of the widgets only. Your screen should now look like this.



Pallet Load Requirements

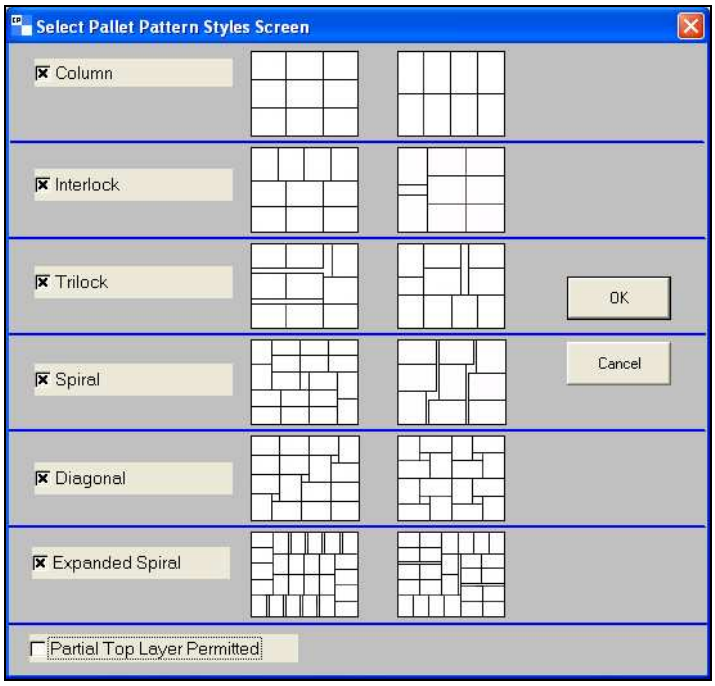
Click on the tab labeled **48x40**.

In the *Pallet Base Style* field, make sure **48x40 US GMA 4-way pallet** is selected.

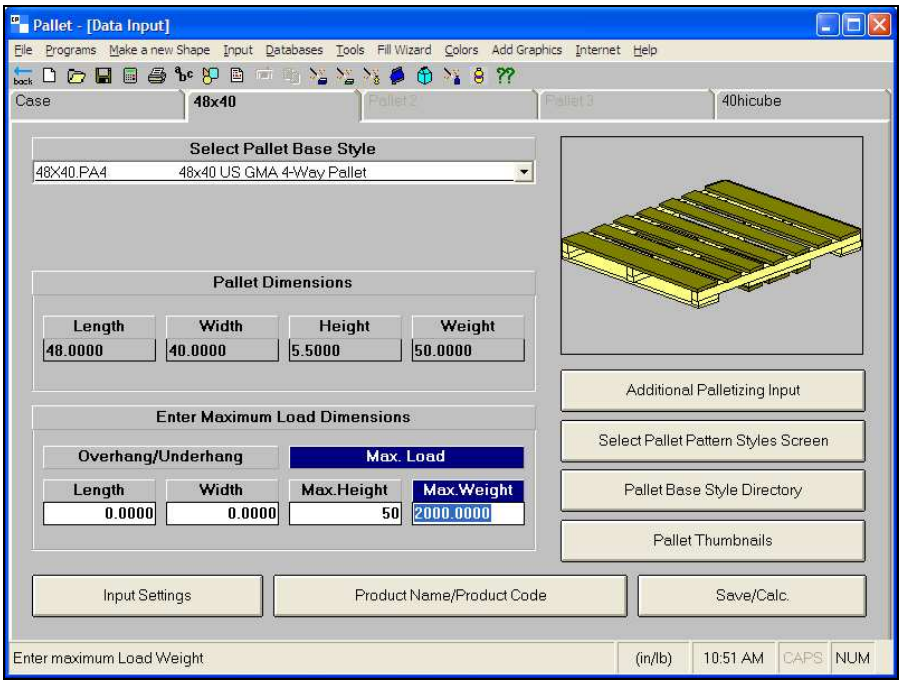
Enter **50** in the *Maximum Height* field. This is the height of the overall load, including the height of the pallet.

Enter **2000** in the *Maximum Weight* field. This is the weight of the overall load including the weight of the pallet.

Make sure all pattern types are marked on the *Pallet Patterns to be Used* screen.



Your screen should now look like this.



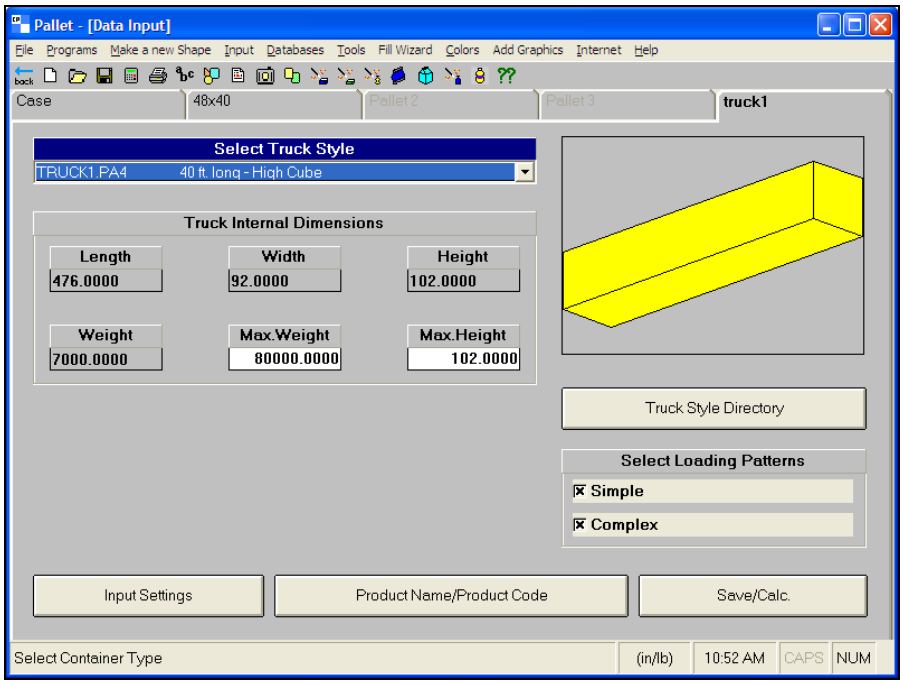
Truck Requirements

Click on the tab labeled **40hicube.**

In the *Truck Style* field, choose **40 ft. long – High Cube**. Notice how many parts of the *Truck Internal Dimension* field are automatically filled in with the values for your truck style.

In the *Max. Weight* field, enter **80000**.

Make sure that **Simple** and **Complex** *Loading Patterns* are marked. Your screen should now look like the following.



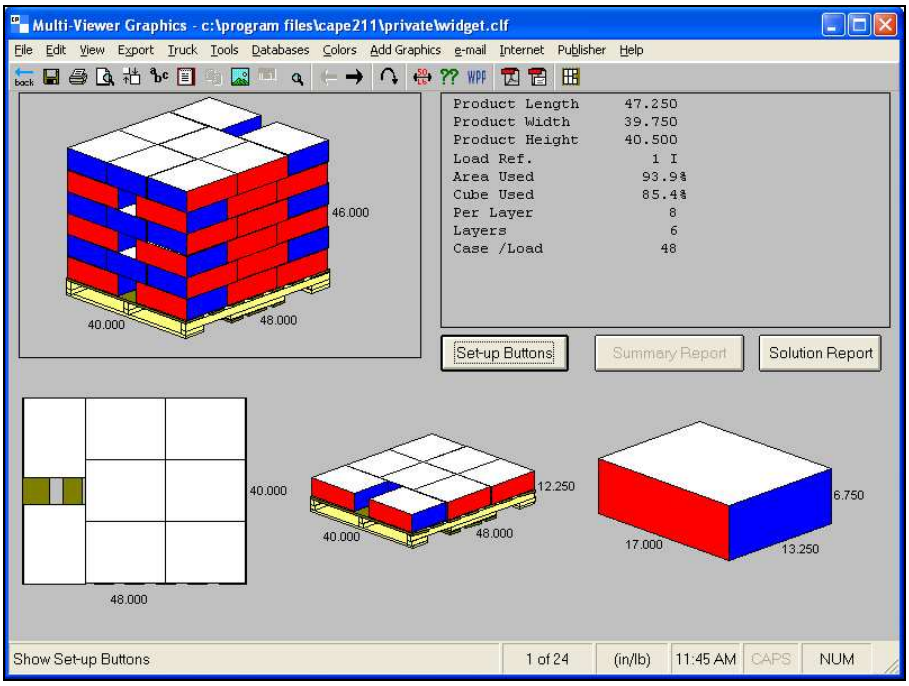
Getting Results

To save your data and calculate solutions, click on the **Save/Calc**. button on any of the input screens. Or you can choose **Save Input Data & Calculate** from the **File** menu.

Type **Widget** in the *File name* box.

Click on **Save**.

The program automatically begins calculating solutions and assembling the diagrams for your problem. When the calculations are finished you will see a new window, Multi-Viewer Graphics, showing solution number 1.



Click on **Set-up Buttons**. This will display all the controls you need for setting up and creating your diagrams.

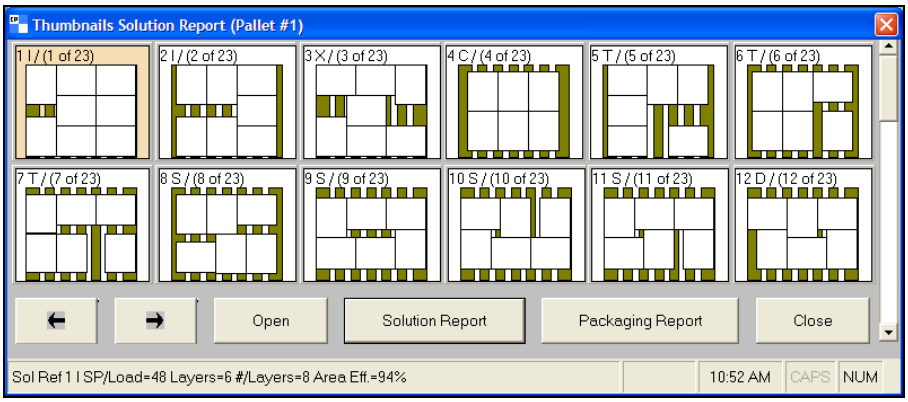
Notice how the button now shows the **Quick Report.** This is used for displaying the solution information. You can toggle between the **Quick Report** and the **Set-up Buttons** just by clicking on this button.

Click on **Quick Report** to bring back the solution information.

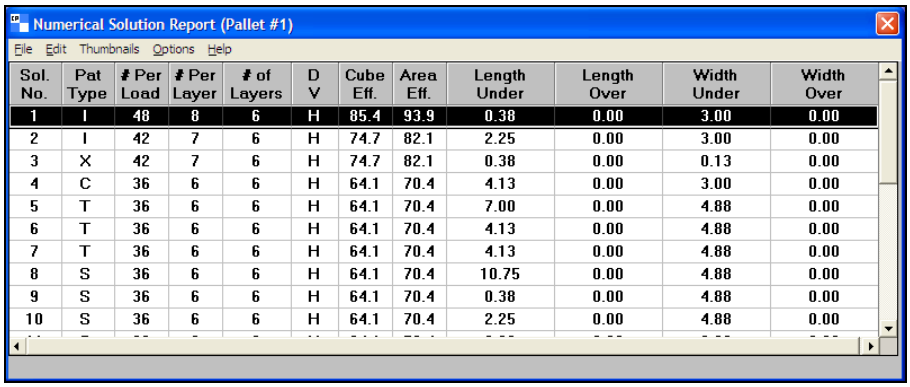
Reviewing Other Solutions

There are three basic ways to review CAPE PACK solutions.

- The Solution Report. Click on the **Solution Report** button to see a list of possible solutions for your analysis.



If you prefer the traditional Solution Report, you can recall that by clicking on the **Solution Report** button on this screen.



Sol. No.	Pat Type	# Per Load	# Per Layer	# of Layers	D V	Cube Eff.	Area Eff.	Length Under	Length Over	Width Under	Width Over
1	I	48	8	6	H	85.4	93.9	0.38	0.00	3.00	0.00
2	I	42	7	6	H	74.7	82.1	2.25	0.00	3.00	0.00
3	X	42	7	6	H	74.7	82.1	0.38	0.00	0.13	0.00
4	C	36	6	6	H	64.1	70.4	4.13	0.00	3.00	0.00
5	T	36	6	6	H	64.1	70.4	7.00	0.00	4.88	0.00
6	T	36	6	6	H	64.1	70.4	4.13	0.00	4.88	0.00
7	T	36	6	6	H	64.1	70.4	4.13	0.00	4.88	0.00
8	S	36	6	6	H	64.1	70.4	10.75	0.00	4.88	0.00
9	S	36	6	6	H	64.1	70.4	0.38	0.00	4.88	0.00
10	S	36	6	6	H	64.1	70.4	2.25	0.00	4.88	0.00

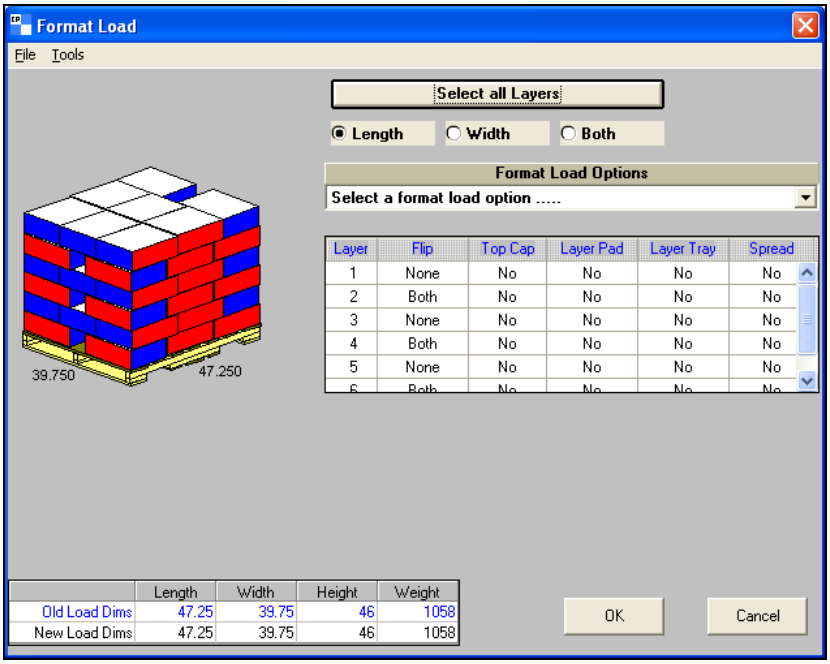
- The Arrow Buttons. Use the arrow buttons to scroll through the possible solutions one at a time.
- Click on the **Jump to a Solution** arrow button. Enter a particular solution number, and click on **OK**. That solution number appears.

Adding Layer Formatting

In order to achieve some level of stability you want to alternate (interlock) the layers of this load. This load also requires a top cap and corner posts. CAPE PACK will be able to display all this for you.

Changing Alternated Layers

Click on the button labeled **Format Load**.



Layer	Flip	Top Cap	Layer Pad	Layer Tray	Spread
1	None	No	No	No	No
2	Both	No	No	No	No
3	None	No	No	No	No
4	Both	No	No	No	No
5	None	No	No	No	No

	Length	Width	Height	Weight
Old Load Dims	47.25	39.75	46	1058
New Load Dims	47.25	39.75	46	1058

Click on the **Select All** button to select all layers of the load.

Now select **Column Stack Layers** from the drop down list.

If you want to select specific layers to flip, hold down **Control** and click on them to select them. Then click on the **Flip Selected Layer(s)** option in the drop down list.

Adding a Top Sheet

Highlight layer 6 in the spreadsheet. This is the top layer.

Select **Top Board** from the drop down list.

In the *Weight* field, from the drop down list, choose **200 A Flute** in the *Thickness* and *Height* fields to fill in the values.

Click on the button labeled **Accept Values**.

You can also change the color of this top board if you choose.

Adding Corner Posts

Select **Vertical** or **Horizontal Corner Posts** from the drop down list.

In the *Weight* field, choose **200 A Flute** in the *Thickness* and *Width* fields.

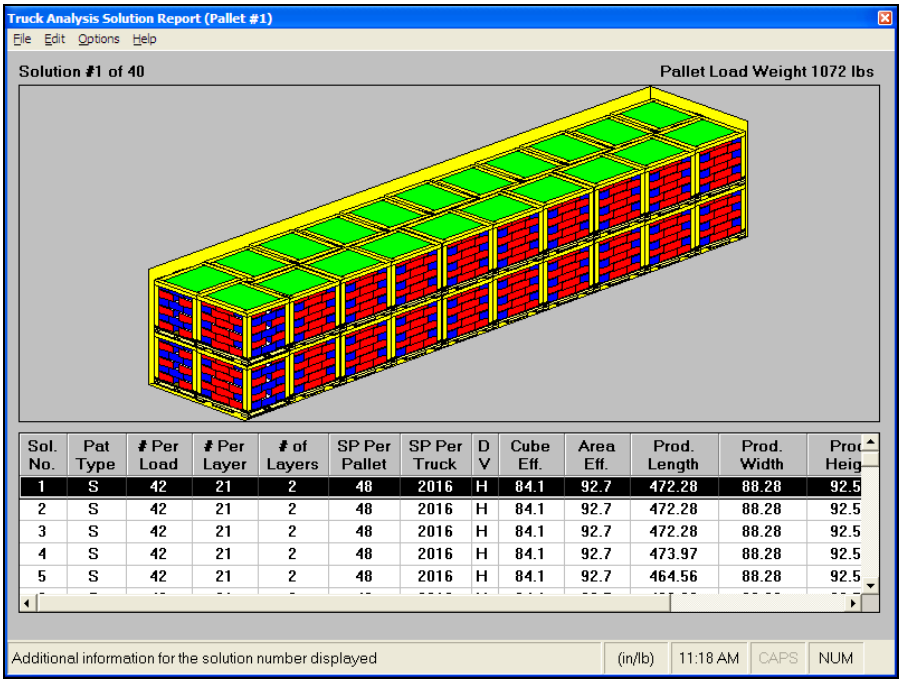
Click on the button labeled **Accept Values**.

Click on **OK** to return to Multi-Viewer Graphics.

Filling the Truck

First, click on Panel 2 of your Multi-Viewer Graphics screen.

From the **Truck** menu, choose **Show my Truck.** You will then see a Truck Analysis Solution Report. From this window you can evaluate different loading solutions. In our analysis, you like solution number 1.



Sol. No.	Pat Type	# Per Load	# Per Layer	# of Layers	SP Per Pallet	SP Per Truck	D V	Cube Eff.	Area Eff.	Prod. Length	Prod. Width	Prod Heig
1	S	42	21	2	48	2016	H	84.1	92.7	472.28	88.28	92.5
2	S	42	21	2	48	2016	H	84.1	92.7	472.28	88.28	92.5
3	S	42	21	2	48	2016	H	84.1	92.7	472.28	88.28	92.5
4	S	42	21	2	48	2016	H	84.1	92.7	473.97	88.28	92.5
5	S	42	21	2	48	2016	H	84.1	92.7	464.56	88.28	92.5

Click on **the File** menu and select **Save Current Load and Exit.**

Your truck will be placed in the last active panel in Multi-Viewer Graphics. You can also choose to evaluate different trucks by changing your Truck Restrictions from the **File** menu.

The Final Touches

Setting up the Screen

Click on the button labeled **Format Screen.**

Click on the button labeled **3**. Multi-Viewer Graphics returns with 3 diagrams.

Setting up the types of diagrams in each panel

Click on the button labeled **Format Panel**.

Highlight panel #1. In the *Diagram Type* field, make sure it is set to **48x40 (#1).**

In the *Diagram View* field, make sure it is set to **Corner View**.

Now highlight panel #2. In the *Diagram Type* field, make sure it is set to **truck1 (#1)TRUCK.**

Finally highlight panel #3. Select **Case #1,** and in the *Diagram Type* field make sure it is set to **Corner View**.

Changing the Case Color

Select the **Colors** menu and then choose **Change Package Color**.

Select the color you want to use and click on **OK**.

Customizing Case Colors

Select the **Colors** menu and choose **Set Custom Colors**.

Each panel has a letter (A-F). Select a panel letter and click on **OK**. The Windows Color Palette appears.

Select a color and click on **OK**.

Change as many panel colors as you wish, then click on **OK**. Your package will appear with all the selected colors displayed.

Applying 3D Graphics

CAPE PACK has the unique ability to add surface graphics to your packaging components. Normally you would need to create the special 3D Image files to use this feature. However, your program is supplied with three 3DI files for you to experiment with.

Click on the panel with the case in it. Select the **Add Graphics** menu and then select **Add 3D Graphics.**

Click on **Case.3DI.** The case will then appear with graphics images on all six of its sides.

Now click on **OK** and the case with the images will appear in the picture window on the input screen**.**

If you do not want to use these images, you can select **Change Package Color, Set Custom Colors** or **Change to Original Colors** from the **Colors** menu.

Formatting Objects

Pallets and Trucks can be formatted with stretch wrap.

Cases can be wrapped and can show content in two different ways:

- Show content cuts away three sides of the box to show the product inside.
- Open flaps opens the flaps of the case and pops the product up so it is shown over the open box.

In addition, you can right-click on your cases and lift the cover off them to show the contents inside.

Adding User Comments

Click on the **Page Setup** option on the **File** menu.

From **Page Setup**, choose **the User Text** tab.

Click on the **Clear** button. If there was any text in the box, it is now gone.

Make sure your cursor is blinking on the first line. If it is not, click the mouse pointer there. As you are typing, you must hit **Tab** at the end of every line.

Type

Widgets, 12 pack **By: (your name here)**

Approved on: **By:** _____

Then click on **OK**.

From the **File** menu, choose **Print Preview** to see how your printed report will look.

Use the scroll bars to scroll around the entire page, or use the **Zoom** controls.

If everything looks okay, click on the **Print** button.

Last, save your graphics. Click on the **File** menu and **Save Solution**.

To email a report or diagram from CAPE PACK, choose the **email** menu and then **email Full Report** or **email Diagram Only**. If you email the full report, you will have a choice of either a PDF or JPG format for the attachment. If you email the diagram only, the attachment will be a JPG file.

To leave Multi-Viewer Graphics, you have 4 options.

- Use the **Back** button to return to your Input Data.
- **File** menu and **Change Input Data** to return to your Input Data.
- Click on the **File** menu and **Exit** to leave the program entirely.
- Click on **File**, **Return to Front Menu** to return to the first screen in CAPE PACK.

Other Pallet Group Features

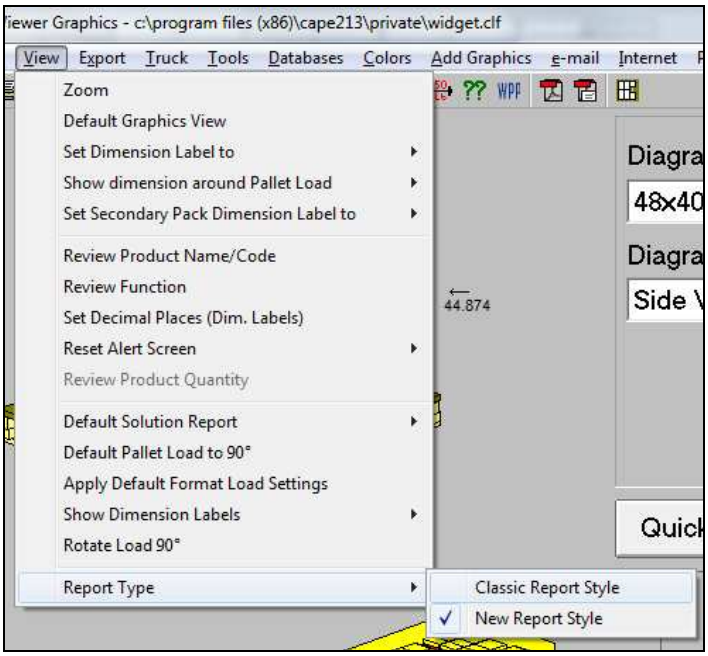
Other things that you can do in the Pallet Group:

- Running an analysis on more than one pallet size at a time. You can work with a maximum of three different pallet sizes at one time.
- Fill Wizard
- Multi-Dimensional Analysis
- Pallet Maximizer
- Master Pallets
- Secondary Package Database
- Precalculate Maximum Load Height
- Partial Top Layers in both Pallets and Trucks

Printing and Custom Reports

Selection Your Report Type

CAPE PACK has 2 standard reports to choose from: **New** and **Classic**. The default for your program is the **New** format. To change the report format, click on the **View** menu, and **Report Type**.



Classic Report Page Setup

The Page Setup feature provides a series of settings that let you choose how you want your diagram or report to be set up prior to exporting or printing it. It is located under the **File** menu in Multi-Viewer Graphics. The variety of features available allows you to "customize" your report to be printed or a diagram to be exported. There are four tabs at the top of the screen. Each one has its own set of options.

Page Setup Tab

Copies	This lets you set the number of copies you want to print.
Left Margin	Lets you set the size of the margin on the left side of the printed page.
Top Margin	Lets you set the size of the margin at the top of the printed page.
Print Language	Allows you to select which language in which you want the CAPE printed information to appear. You can select English, French, German and Spanish. Or any other language you have added through the Program Setup option.
Print Quality	Allows you to select from levels of print quality **Presentation**, **Draft** and **Fast Print**. Presentation mode is the highest quality of print and fast print is the lowest quality.
Color	Lets you choose between **Color**, **Black and White** or **No Hatching** options for your reports.
CAPE Report Font	Allows you to change from the standard Courier New font to a true type font.

Report Type	Lets you select either the standard CAPE report or the alternative CAPE report with **four** additional text fields.
Report Units	Select either Inches and pounds or metric for your report to be printed in, regardless of the units you entered when calculating.
Show Logo	Allows you to display a logo at the top left of your printed report.
Logo Width	Sets the **width** of the logo. **The height is already fixed**. Simply enter the width in inches or millimeters depending on the units you are working in, and the logo will appear in the correct proportions.
Show Header	Determines whether the information at the top of the printed report appears or not.
Show Overhang	This is an on/off setting to allow overhang to be shown in the header information. If you do not want the overhang statement to appear, then leave this setting **off**.
Driver Fix	This is an additional setting to be used if you are having problems printing your CAPE Reports.
Show Product	Activates the Product information lines for both the pallet and truck loads.
Skip Driver Copies	An additional setting for correcting printer driver problems.
Speed Print	Speed Print was developed to allow the user to reduce the number of items being printed in the load by only showing those items on the outside edges of the load (i.e., the middle of the load is hollow), increasing the printing speed.
Actual Net Weight	This option only applies to the Arrange and Design program groups. When the option is turned **on,** the program will calculate the net weight of the primary pack and multiply it by the number of primary packs in the load. When the option is turned **off** the program will calculate the net weight of the load based on the calculated net weight of the secondary pack, multiplied by the number of secondary packs in the load.
Show Legend	This is an on/off setting and refers to the blocks of color or hatching patterns and layer pad indicators that appear above the diagrams in a printout.
Update Export Settings	Copies all appropriate print settings to Export Settings.
Show User Text	Turns the User Text Feature on or off on the report.
Show Package ID	Normally CAPE Reports are printed with **outside** pack dimensions. This feature allows you to change the format to print the **inside** dimensions. If you have not specified a material thickness for a pack, the dimensions will be the same.
Show Cube	Turns the cubic feet or meters measurement on or off on the report.

Page Split Tab

This tab explains how the on-screen diagram, depending how many panels are displayed, will appear on the printed page. The following example shows a screen with 3 panels.

User Text Tab

This tab allows you to enter up to 6 lines of free-flow text in any font you wish to the bottom of your report. You can also establish your own "default" user text to appear on each report.

User Fields Tab

If you choose to use the Standard Report with User Fields format, this tab allows you to enter the four lines of user field information.

Annotations

CAPE defines "Annotation" as text that you can put anywhere on the printed page. It is entered in a box and can be in any font, with any color text, border and background.

When you annotate text, the text appears in a box flanked with an arrow head.

> To add an annotation to a CAPE report, make sure the solution number you want to print is showing on the screen.

Choose the type of report you want.

From the **File** menu, choose **Print Preview**.

Use the scroll bars to scroll around the entire page or use the **Zoom** controls so you can see where on the page you want to add your annotation.

Click on the **Annotation** button.

Select the font style of the text you want to add by clicking on the **Font** button and choosing a font type and size.

Click on **OK** to accept your changes and return to the Annotation Text dialog box.

Use this method to change your text, background and border colors if desired.

Type the text you want to appear in the box.

Click on **Place at new position**. You are returned to the Print Preview Window and a message box appears.

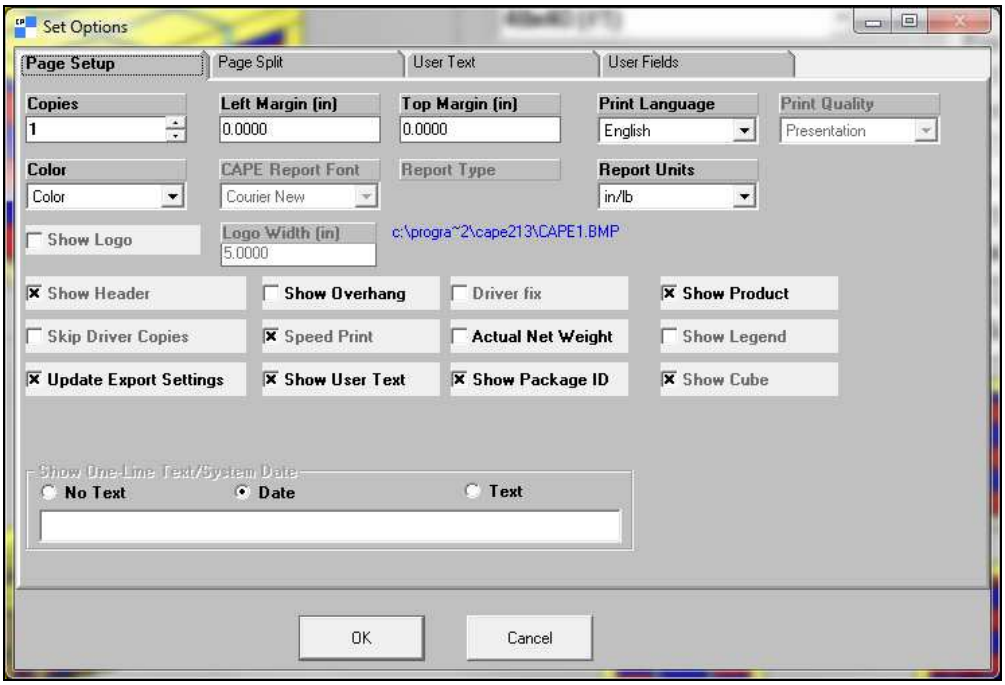
Click on **OK**. The diagrams redraw and the cursor appears as a cross.

Move the cursor to a point where you would like the annotation text to be placed.

Press and hold the **Shift** key on the keyboard, then click and hold with the left mouse button. Drag the box to the size you want and let go.

New Report Page Setup

You will notice when you see the New Report Page Setup that there are several items that are grayed out. These do not apply to this report style.



To Print

Choose **Print** from the **File** menu.

Ensure all options are correct. Click on **OK**. Printing should start.

If you need to set a specific printer, you can select it from the *Name* list. Clicking on the **Properties** button will allow you check the setup of the new printer.

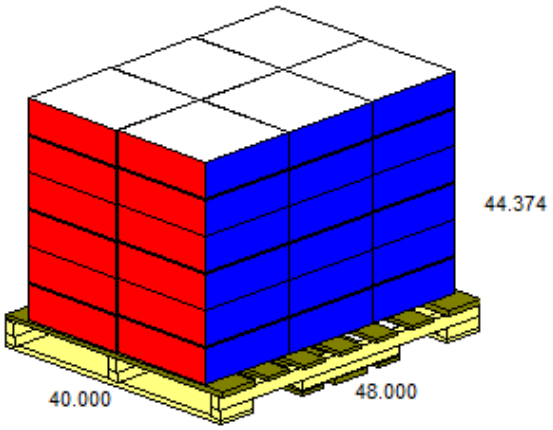
To cancel before printing starts, click on the **Cancel** button.

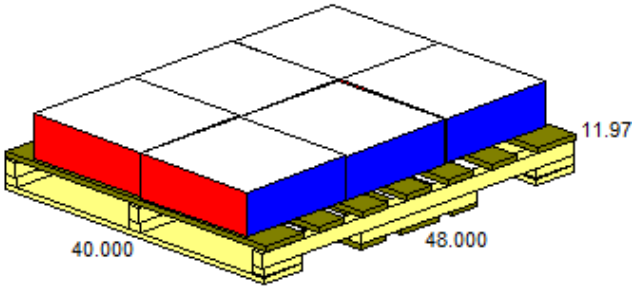
Classic Report Style

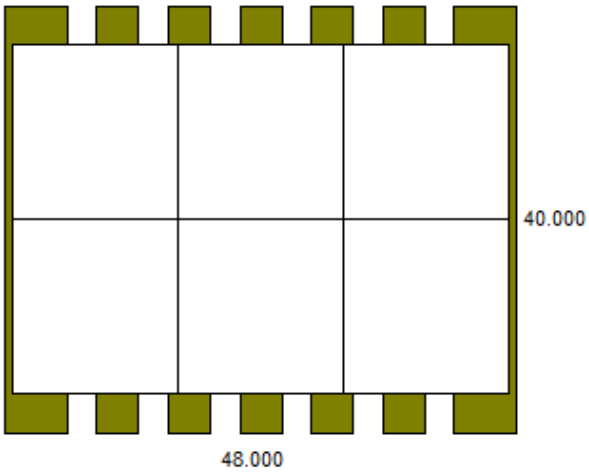
Tuesday, July 23, 2013

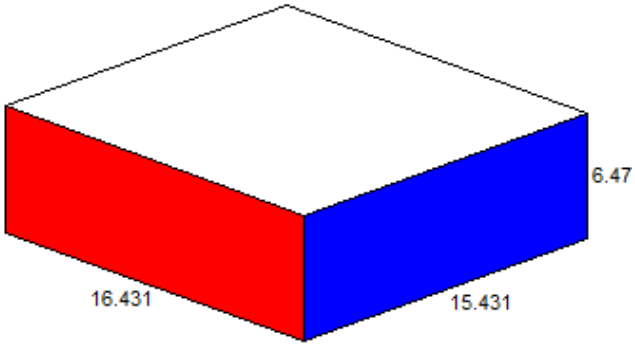
Product Name	Widget		
Product Code	062469		
Datafile Name		(6/18/2013)	
Load Ref.	1 C		
Cube Used	69.2 %	6	Case / Layer
Area Used	79.2 %	6	Layer / Load
Pallet type	48X40	36	Case / Load

	Length	Width	Height	Net	Gross	Volume
Case (OD)	16.431	15.431	6.479 in	12.000	13.000 lb	0.95 cuft
Product	46.293	32.862	38.874 in	432.000	468.000 lb	34.22 cuft
Load	48.000	40.000	44.374 in	468.000	518.000 lb	49.30 cuft









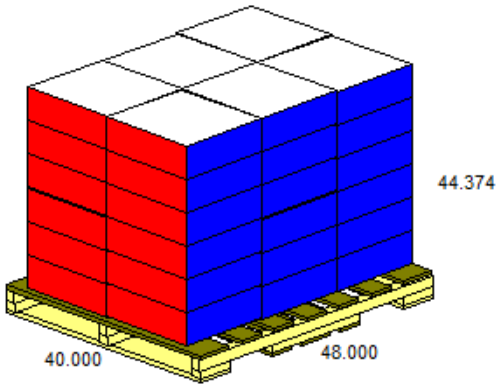
This is an example of the standard CAPE report, using typical information and dimensions.
To change this text or this report, click on File, Page Setup.
To create a customized report, click on File, Print Custom Report.

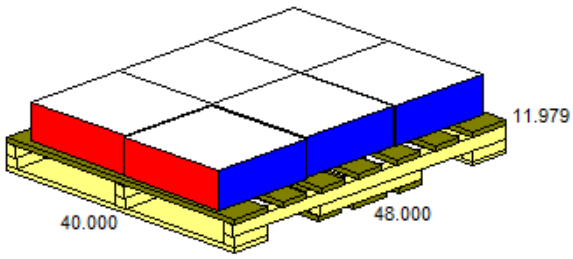
These 6 lines can be customized with any information you need.

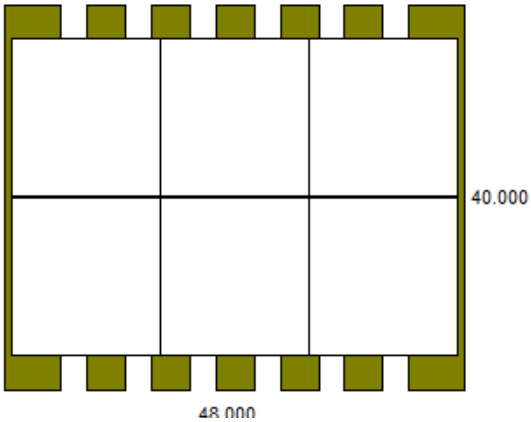
New Report Style

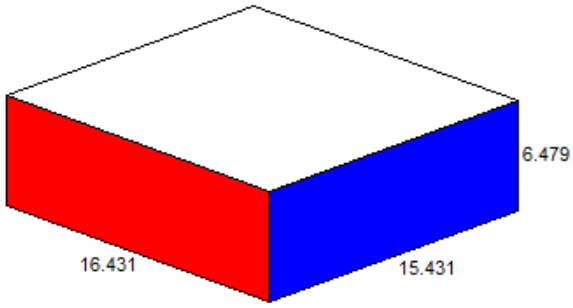
Product Name	Widget				
Product Code	062469				
Datafile Name					
Load Ref.	1 C	(6/18/2013)			
Cube Used	69.2 %	6	Case	/	Layer
Area Used	79.2 %	6	Layer	/	Load
Pallet type	48X40	36	Case	/	Load

	Length (in)	Width (in)	Height (in)	Net Weights	Gross Weights		Volume	
Case (ID)	0.634	0.594	0.232	26.455	28.660	lb	0.00	cuft
Case (OD)	16.429	15.429	6.480	26.455	28.660	lb	0.95	cuft
Product	46.291	32.862	38.874	952.387	1031.753	lb	34.22	cuft
Load	48.000	40.000	44.374	1031.753	1141.983	lb	49.30	cuft









This is an example of the standard CAPE report, using typical information and dimensions.
To change this text or this report, click on File, Page Setup.
To create a customized report, click on File, Print Custom Report.

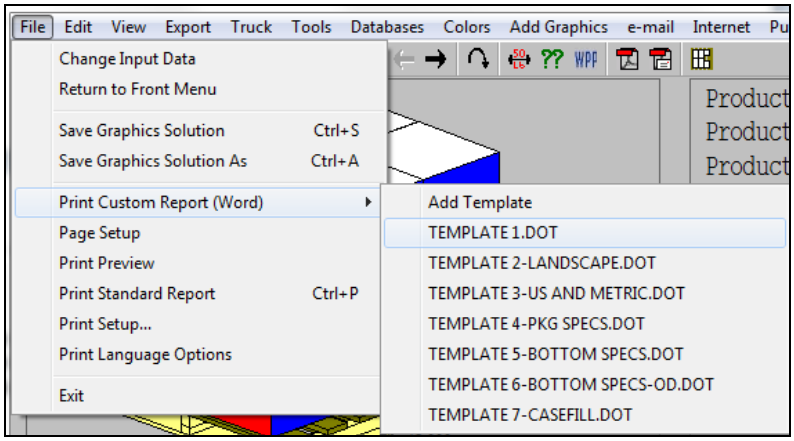
These 6 lines can be customized with any information you need.

Page 1 of 1

Custom Reports

We have included several custom reports for use with your software. CAPE Custom Reports are individually designed printouts using a Microsoft Word Template. To fill out the information boxes/spaces you will need to create a Microsoft Word Macro. This will populate the text, number and diagram fields of the report. You can either edit the templates, or you can create new templates and custom reports for yourself.

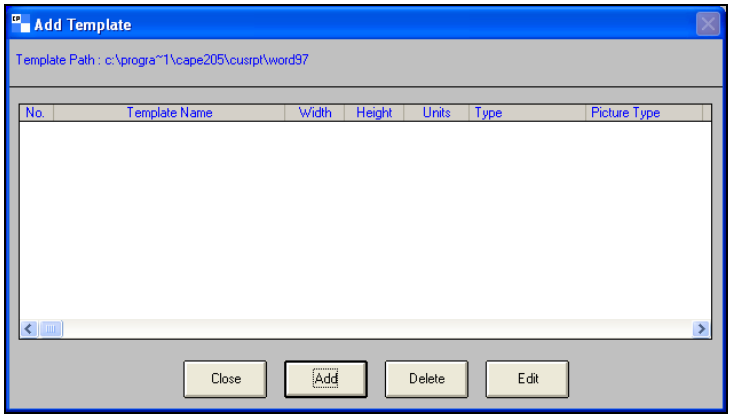
In CAPE PACK 2.13, we have setup 7 report styles for you.



Setting Up Custom Reports

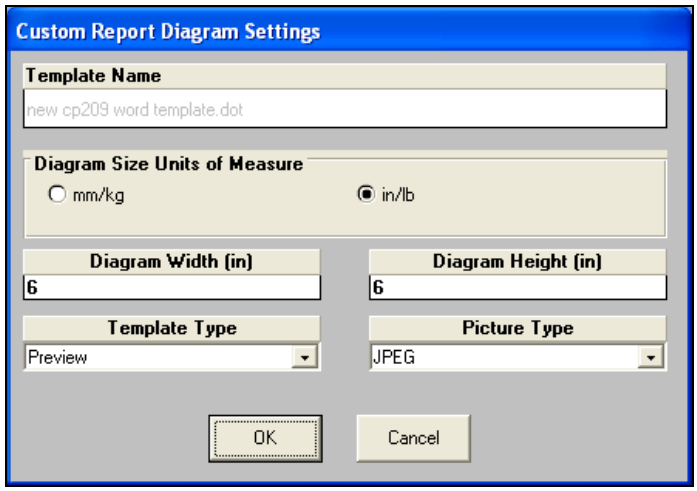
There is a special option on the **File** menu in Multi-Viewer Graphics called **Print Custom Report (Word).**

Select **Add Template** from the menu.



Click on the **Add** button to add templates, or highlight a template and click on the **Delete** button to remove it from the list.

When you add a template, an additional screen will appear to allow you to set your diagram export size, template type and diagram type. The diagram type must be consistent with the macro you are using. So if the macro states the use of a PCX file then you must select this type of diagram.



Your template types include

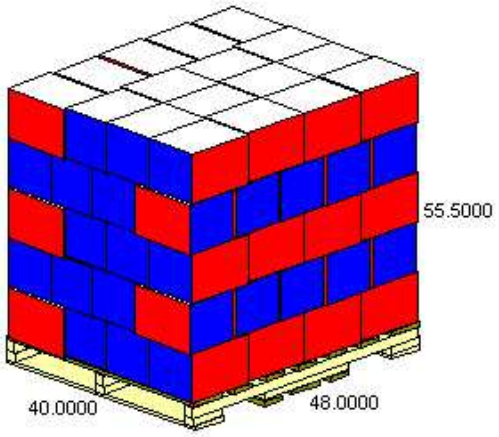
- **Print** for automatic printing.
- **Custom 1** which is option not currently available.
- **Preview** to stop the printing in Word
- **Full Report** to stop the printing after the document has merged.
- **Custom 2** which is option not currently available.
- **Preview Alt. Layers** which is a special report type designed for Europe.
- **Separate Diagrams** which is a report type that lets you separate your pictures and place them in different spots on the report rather than all together as one graphic.

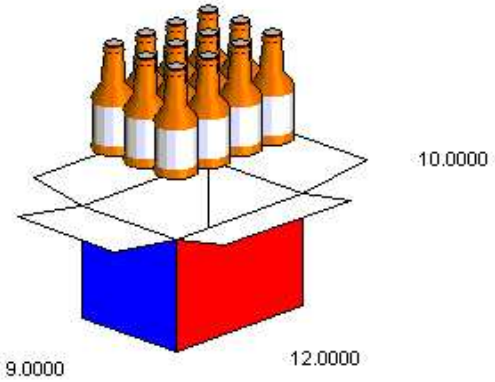
To print a template, click on the **File** menu, select **Print Custom Report (Word)** and then click on the template you want to print.

This action will cause the CAPE PACK to open Microsoft Word and your template file. It will then populate the data fields and graphics fields with information from your load file and print the document.

December 12, 2013

Customer	Arrange Group					
Product Name	Cylinders/Bottles	**Palletizing Information**				
Specification Details	K3N293094000	12	**Bottles**	**/**	**Case**	
Datafile Name	giz-bot 8/26/2010	1020	**Bottles**	**/**	**Pallet**	
Solution Ref	1 I	17	**Case**	**/**	**Layer**	
Cube Used	87.729 %	5	**Layers**	**/**	**Pallet**	
Area Used	95.625 %	85	**Case**	**/**	**Pallet**	
Pallet Name	48x40					





	Dimensions				Weight		
	Length	**Width**	**Height**		**Net**	**Gross**	
Bottle	3.000	3.000	10.000	in	1.000	1.000	lb
Case ID	12.000	9.000	10.000	in	12.000	12.000	lb
Case OD	12.000	9.000	10.000	in			
Cases Stacked	48.000	39.000	50.000	in	1020.000		
Cases & Pallet	48.000	40.000	55.500	in		1070.000	lb

Comments:

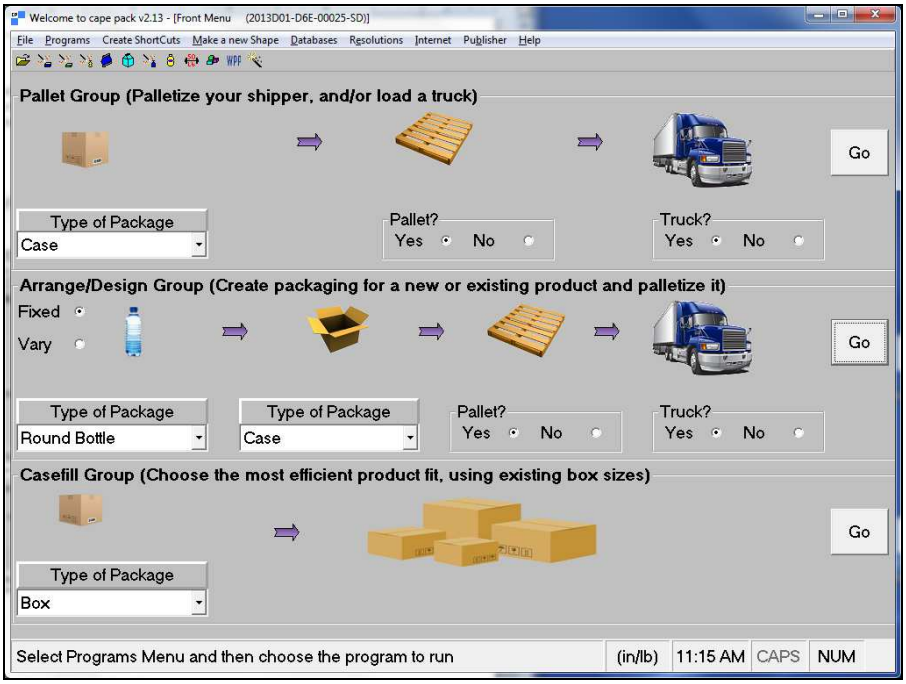
Arrange Group - Creating New Case Sizes

The Problem

To demonstrate the Arrange Group, we will be using our cylinder shape that we created in the last tutorial. The bottle is 3" in diameter and 10.25" high. We will bundle them four to a tray using the tray that we created. We need to determine the most efficient case size given the available case counts of 4, 8, 12 and 16.

Where do I begin?

Select **Round Bottle** from the *Type of Package* list for the Arrange Group, click on **Yes** for Pallet and **No** for Truck. and click on **Go**.



Click on the **Input Settings** button.

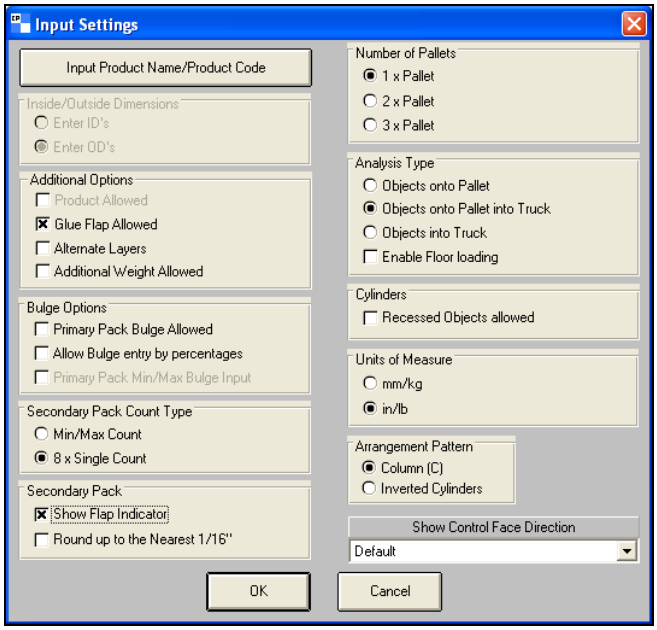
Click on **OK**.

Make sure the following items have a check mark next to them:

- **Glue Flap Allowed**
- **8 x Single Count**
- **Show Flap Indicator**
- **1 x Pallet**

- **Objects onto Pallet**
- **in/lb**

Your Input Settings screen should look like this.



Click on **OK**.

Then click on the **Product Name/Product Code** button.

Enter **Bottled Gizmo** in the *Product Name* field.

Enter **1234567** in the *Product Code* field.

Click on **OK**.

Product Details

Choose **Giz-Bot** from the *Primary Pack Type* list.

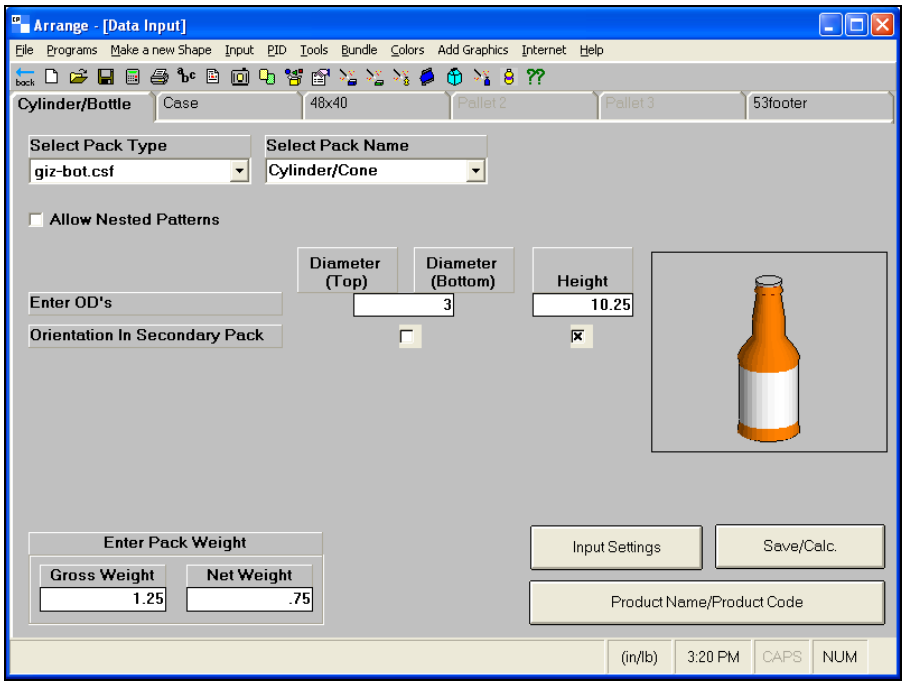
Enter **Bottle** in the *Primary Pack Name* field.

Enter **3** in the diameter fields, and **10.25** in the height field.

Choose **Height** in the dimensions allowed vertical in secondary pack.

This bottle holds 12 ounces of product, and the bottle weighs 6 ounces. The total gross weight is 1 pound, 4 ounces. Right click on the *Gross Weight* field and select **4** ounces, then enter a **1** in place of the 0 making the total Gross weight **1.25** pounds.

Right click on the *Net Weight* field and select **12** ounces from the list.



Bundling Product within the Secondary Package

Click on the **Bundle** menu, and **Define/Review Bundle Input**.

For the *Bundle Package*, select the **Giz-Tray** that we designed.

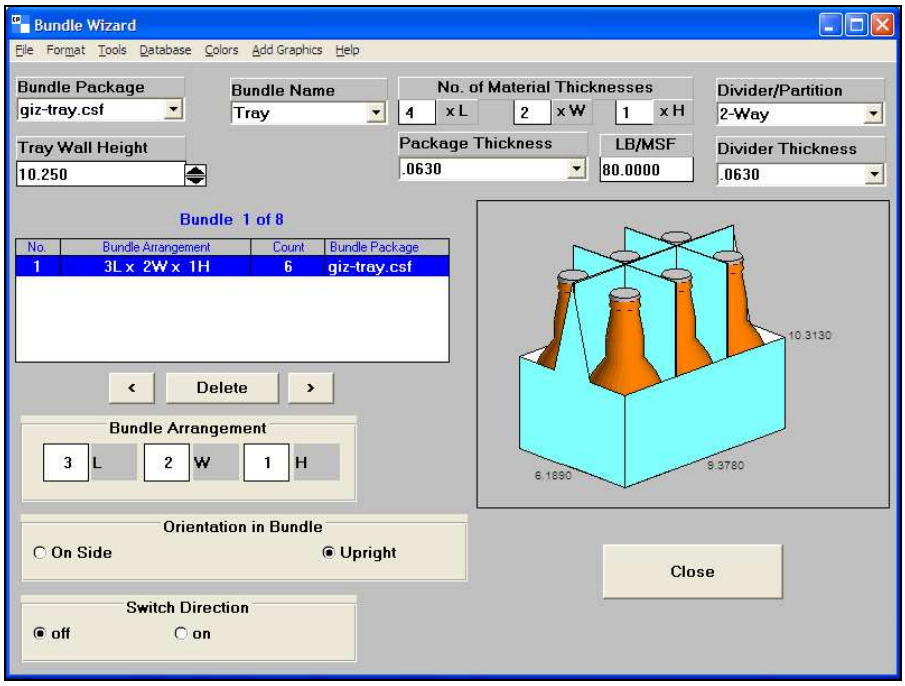
For *Bundle Name*, select **Tray** from the drop down list.

For *Divider/Partition*, select **2-Way** from the list.

Enter **10.25** inches for the *Tray Wall Height*.

Select **125 E Flute** for the tray material as well as the partition material.

For *Bundle Arrangement*, enter **3 x 2 x 1** for the L, W and H respectively. This will give us a tray of 6 bottles.



You can also create and use a bundle database. In this way, you can setup options for all the different bundles that your company uses, and then just choose the appropriate ones when you are setting up the problem.

Click on **Close** to accept the bundle information.

Case Details

The information on this tab is used to outline the type of case that the program will design for you. You enter in the package type and board that you want to use, the counts of primary packages that you can accept, and if necessary, the minimum and maximum case dimensions. From this information, the program will arrange your packages into new case sizes and display your options.

Click on the tab labeled **Case**.

Choose **Giz-case.csf** from the *Secondary Pack Type* field.

Choose **Case** from the *Secondary Pack Name* field. This is a descriptive name for the shipping case or secondary pack.

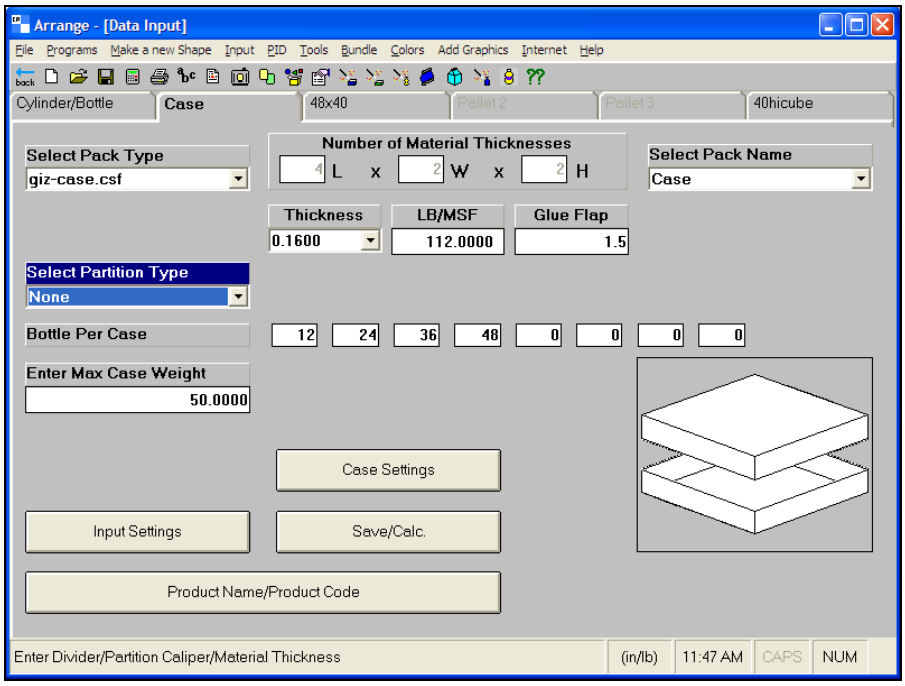
Choose **200 B-flute** from the *Thickness* field. The lb/msf field fills in automatically.

Enter **1.25** in the *Glue Flap* field.

We will not use a partition type so leave that field as it appears.

In the *Carton per Case* field enter **12, 24, 36** and **48** in the first four blocks.

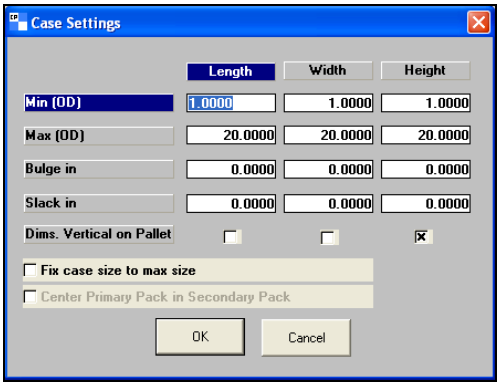
Enter **50** in the *Maximum Weight* field. Your screen will look like the following.



Case Settings

CAPE PACK also allows you to set up defaults for case restrictions. These are handled using the **Case Settings** button.

Click on the **Case Settings** button and the following screen appears.



Enter the following information concerning the new case the program will calculate for you.

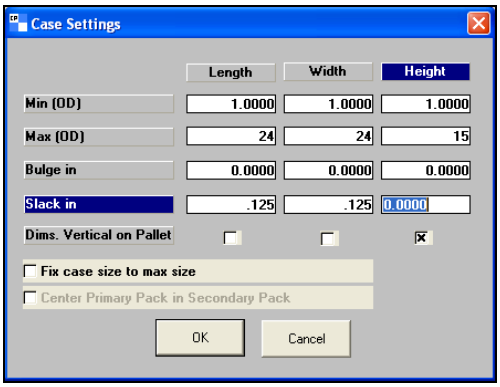
Minimum Dimensions are an optional input. The program does not require this information to calculate the results. Enter **1**, **1** and **1** in these fields.

For *Maximum Dimensions*, **24, 24** and **15** in the *Length*, *Width*, and *Height* fields respectively.

Bulge is an optional input that will not be used for this analysis. Leave these fields set at **0**.

Slack in I.D. is another optional input that was selected on the Input Options screen. Enter **.125** in each of the slack fields.

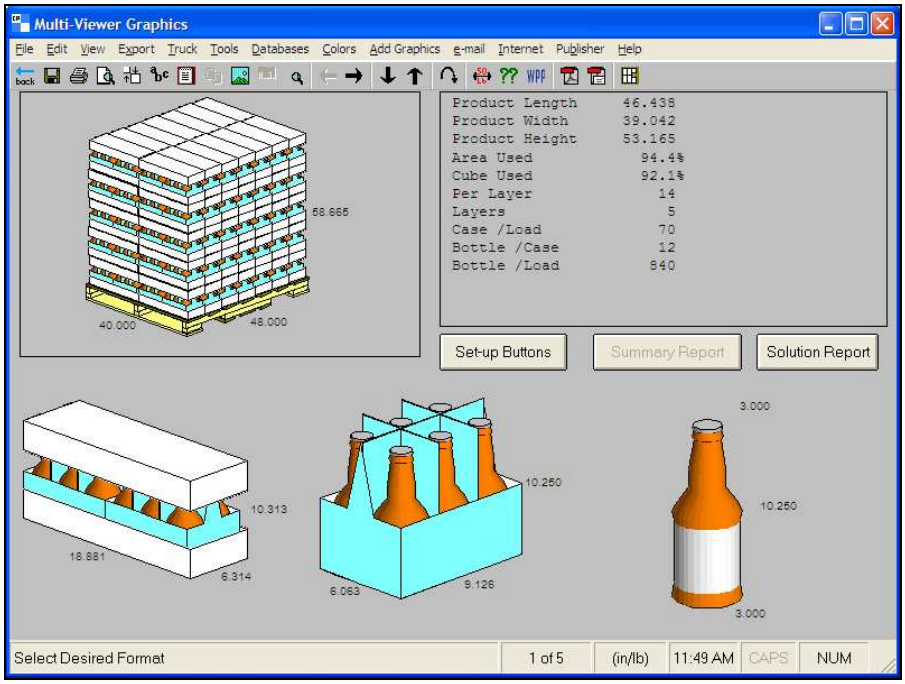
Make sure the **Height** box is marked in the *Dim. Vert. to Pallet* field. The case can only be loaded in an upright fashion.



Pallet loading restrictions are entered exactly the same way in the Arrange Group as in the Pallet Group.

To save your data and calculate solutions, click on the **Save/Calc**. button on any of the input screens. Or you can choose **Save Input Data & Calculate** from the **File** menu.

Multi-Viewer Graphics features are also the same as in the Pallet Group.



Interlocking Cartons in the Case

Sometimes a specific carton size and case count using the standard row/column packing method will not generate a suitable case size and efficient pallet load. Try the “interlocking” method of packing.

At the input screens, you need to select **Input Settings** from the **Input** menu. You will notice in the bottom right corner that the **Column** Arrangement Pattern is selected.

Click on the **Interlock** pattern and then enter a minimum fill percentage (**Min. Fill %**)of **80**.

All you need to do now is select **Save Input Data and Calculate** from the **File** menu and the program will calculate your results.

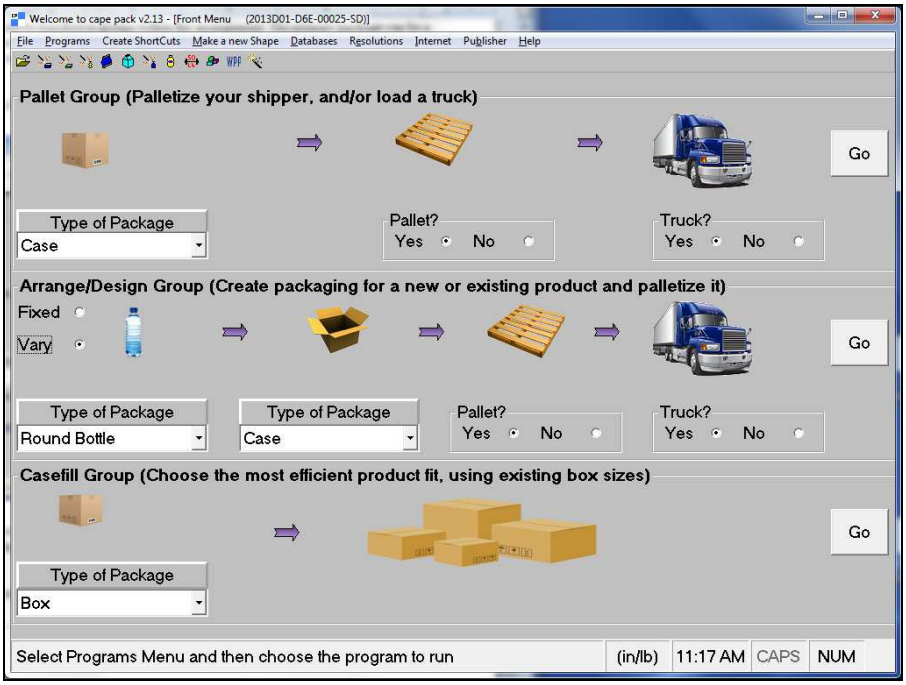
Design Group - Designing New Package Sizes

The Problem: Redesigning your Primary Package size

The programs in the Design Group can help you determine how to maximize the number of primary packages on the pallet by looking at new sizes for those primary packages. First, the program will calculate a new size for the primary packages and then arrange them. It will then calculate a case size based on that arrangement. Subsequently, the new case is palletized for shipping.

You specify the shape of the primary package, how much it can vary in size, as well as how many you want in an arrangement and, if necessary, how the primary package should be bundled in groups within the arrangement. The primary package can be a box, bag, bottle, cylinder, oval or trapezoid or any shape created in the Make a new Shape feature. Running an analysis for each type of object is the same, but the type of data you input will be different. This tutorial will take you through an analysis for a carton.

Select **Round Bottle** from the Type of Pack list for the Arrange/Design Group, click on **Vary** and then click on **Go**.



The data needed for the Design Group is the same as for the Arrange Group, with a few extra fields added. You can open your Arrange Group Analysis in the Design Group and not have to re-enter all of your data. From the **File** menu, choose **Open**.

Find the CLF file you created in the Arrange Group in the list of filenames and click to highlight it.

Click on the **OK** button to open this file. This will open our Arrange Group file.

Now select the **Design Group, Cylinder/Bottle** from the **Programs** menu.

The next step is to add the information about changing the size of the carton.

For *Dimensional Variance (+)*, enter **1** in both the diameter and height fields.

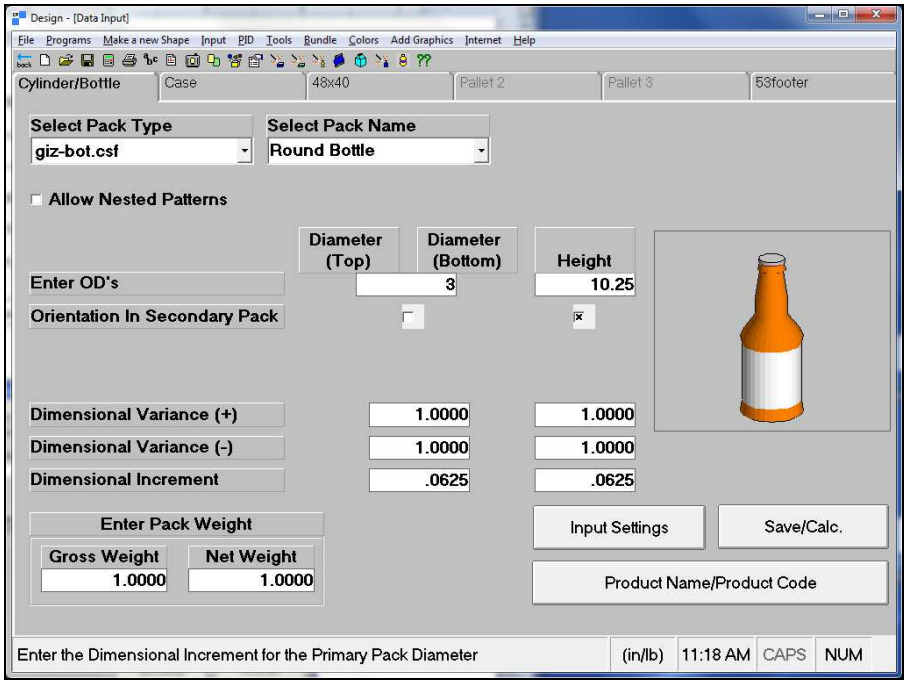
For *Dimensional Variance (-)*, enter **1** in both the diameter and height fields.

For *Dimensional Increment*, enter **.0625** in both fields.

We will also need to vary the volume of our product with the size variance. Select this option from the **Input** menu. Vary the volume by **20**%.

The program is restricted to twenty increments plus and twenty increments minus for a total of 40 increments.

Your screen should now look like this.



The rest of your input screens remain unchanged.

Getting Results

To save your data and calculate solutions, click on the **Save/Calc**. button on any of the input screens. Or you can choose **Save Input Data & Calculate** from the **File** menu.

The program automatically begins calculating solutions. When it is finished, you will see the Multi-Viewer Graphics screen. Graphics options remain the same as in the other groups.

Box and Carton Maker's Tools

KDF Group

The KDF Group is for dealing with palletizing and truckloading of knocked-down flat cases. This program calculates pallet loads for bundles of flats or flat folded and glued cases, and loads these into a truck. It also has the ability to create bales of these cases and then load out the truck. There are four modules in this program:

- Flatblank: If you want to enter the case's flatblank size, and put your KDFs onto a pallet, use this program.
- Made-up Case: If you want to enter the case's finished inside dimensions, and put your KDFs onto a pallet, and into a truck, use this program.
- Bale Flatblank: If you want to enter the case's flatblank size, arrange your KDFs in bales, and then load them into a truck, use this program.
- Bale Made-up Case: If you want to enter the case's finished inside dimensions, arrange your KDFs in bales, and then load them into a truck, use this program.

Getting Started

On the **Programs** menu select KDF and the type of package you want to work with (i.e. Flatblank or Made-up Case.

Or you can toggle between the Casefill Group and the KDF Group on the Front Menu by choosing that option from the Programs menu.

Whichever way you choose to start the KDF program you will arrive at the first input screen with your Default Settings already filled out.

These settings are previously loaded data input figures that have been saved as your Default Settings. So, in our analysis we can simply change the figures, to suit our product information, and then save our data to a new file name. That way the Default Settings will remain unchanged and our new filename, containing all the data we use for this analysis, will be saved for future reference.

Modifying Formulas

By clicking on the **Add/Edit Formula** button on the first input screen you can modify your KDF formulas. The following apply:

Flatblank: The formula is the length of the Flatblank multiplied by a number (usually less than 1), the width multiplied by a number (normally 1) and the height multiplied by the number of material thicknesses in the final KDF/Flat-Glued Case (normally 2 or 3).

Made-up Case: This formula creates the length of the KDF/Flat-Glued case by adding the length of the Made-up case plus allowances to the width of the case plus allowances. The width of the KDF is generated from a combination of the height of the case plus allowances added to the width of the case plus

any allowances. The height of the KDF is created by multiplying the material thickness of the corrugated material by the number of material thicknesses in the final KDF (usually 2 or 3).

The number of fields in the formulas is fixed. But you can vary content according to the case style, the material specification and the allowances you need to consider for each case/material type. And, you can add as many formulas as you need.

Running a Flatblank Analysis

In this analysis we will start with a specified size for a flatblank, select a formula and specify the min/max number of KDFs per bundle. We will choose a 48x40 GMA pallet and a 40 foot truck. We will then let the program determine the best number of KDFs per bundle, per pallet and per truck.

Using the methods described earlier, launch the KDF Flatblank program. You will see the first Input screen with the Default Settings already filled out.

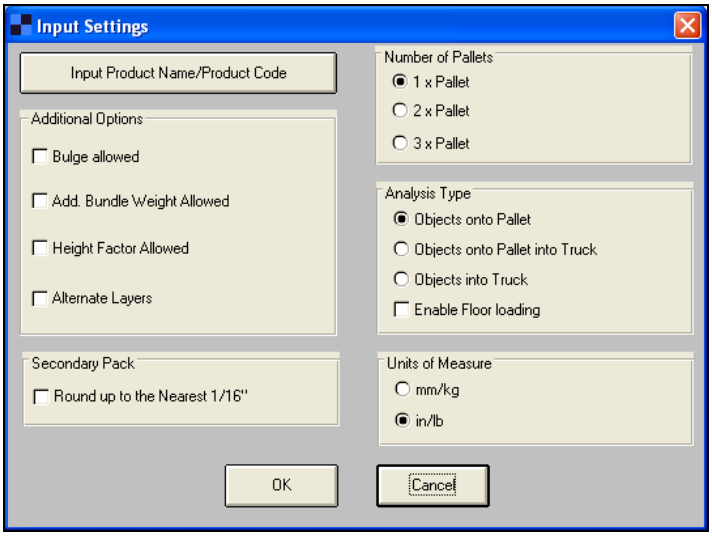
Click on the **Input Settings** button or use the right mouse click feature to activate your Input Settings. Here you have several options for your analysis:

- **Bulge Allowed** (e.g. bundle spreads under compression on the pallet)
- **Add. Bundle Weight Allowed** (if you want to add extra weight for straps etc)
- **Height Factor Allowed** (if you need to use a fluff factor, or compress or expand the height of the bundle)

We will not be using any of these features in our first analysis.

On the right side of the screen we need to choose the appropriate settings for our problem. We are putting our bundles on to a single pallet size and then we want to load those pallets into a truck. So make sure the settings are as follows.

- Select **1 x Pallet**.
- Select **Objects onto Pallet.**
- Under **Units of Measure**, select **in/lb.**



Click on **OK** at the bottom of the screen and you will returned to the first input screen.

You have to change the size and weight of the flatblank, pick a material thickness, select an appropriate formula, choose a min/max number per bundle and the program updates everything for you.

Starting at the top of the screen, change the *Flat Length* to **28**, and the *Flat Width* to **18.75**.

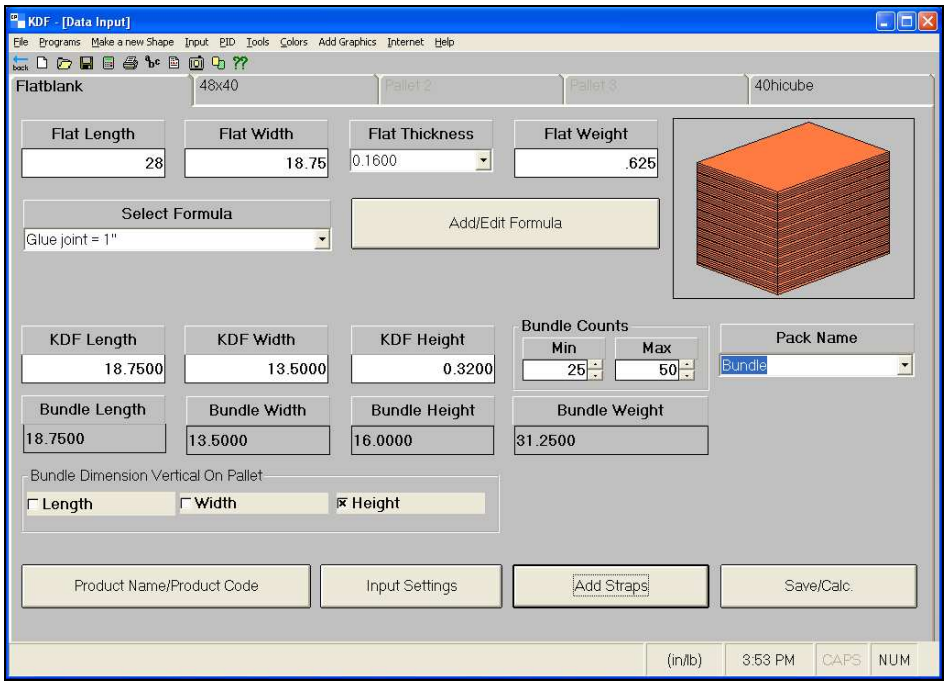
From the *Flat Thickness* list, select **200 C Flute 42-26-42.**

Change the *Flat Weight* to **.625**.

Click on the *Select Formula* list box and select **Glue joint = 1".** Notice how the KDF dimensions and Bundle dimensions have been updated to reflect your input.

Now change the Bundle Counts. Make your **Minimum 25** and your **Maximum 50**.

Make sure **Height** is selected for Bundle Dimension Vertical On Pallet.



See how the picture of the bundle and how the height and weight of the bundle also changes as you increase/decrease the number of KDFs per bundle.

Adding Straps to the Bundle

Click on the **Add Straps** button at the bottom of the screen:

Enter **1** for the number of straps *Across the Length* of the bundle.

Enter **1** for the number of straps *Across the Width* of the bundle.

Enter **3** for the *Width* of the straps This figure is expressed as percentage of the bundle size so 2 or 3 should be sufficient.

Now click on **OK** and you will be returned to the input screen. The picture of the bundle now shows yellow straps on it:

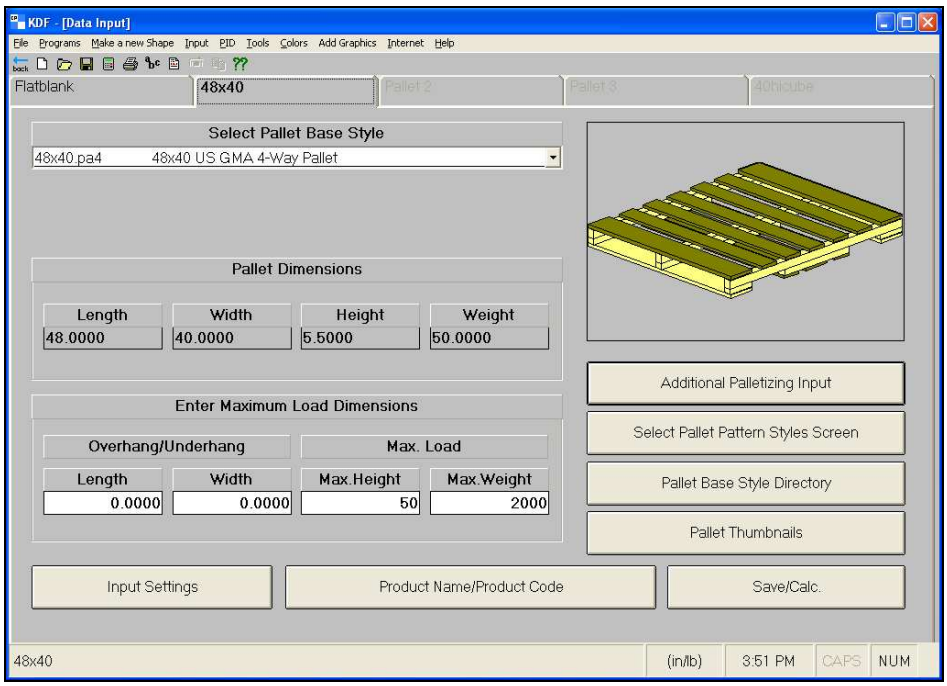
Pallet Information

Click on the tab heading with the name **48x40** to switch to the Pallet Restrictions tab.

If you want to change to a different pallet, click on the Select Pallet Base Style list and select the pallet you prefer.

To select the pallet pattern types you want to consider, click on the **Select Pallet Pattern Styles Screen** button.

Change the *Max. Height* to **50**, and the *Max. Weight* to **2000**. Your screen should look like this.

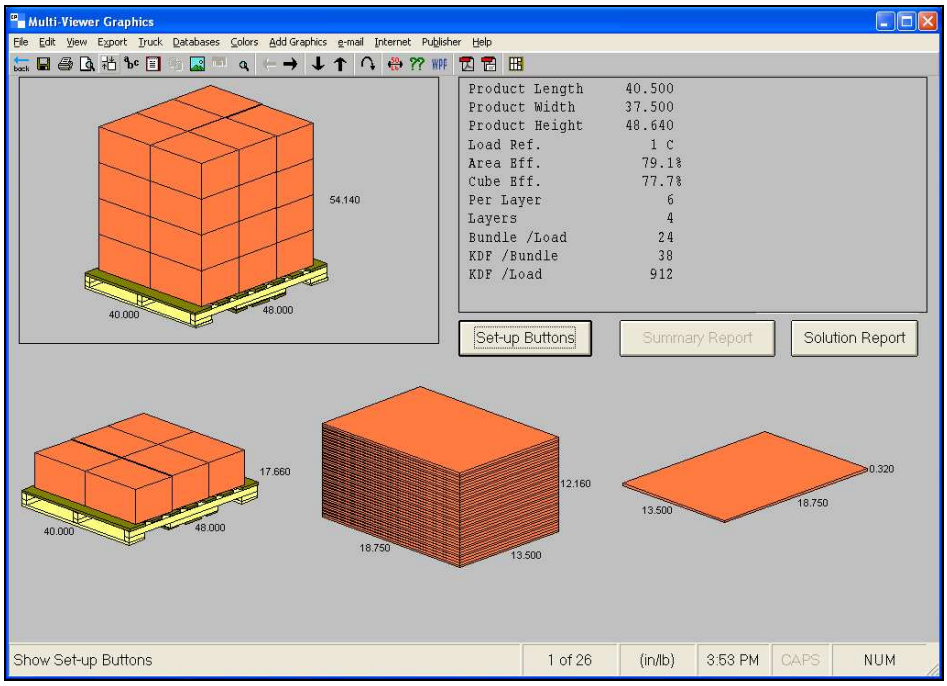


Saving Flatblank Data

Next we need to save our input data and calculate solutions. We have changed those settings and now we need to save our data to a filename we can recognize.

To save your data and calculate solutions, click on the **Save/Calc**. button on any of the input screens. Or you can choose **Save Input Data & Calculate** from the **File** menu.

Enter a filename of your choice, in the **Save As** dialog box, and click on **Save**. The next thing you will see is the graphics screen with the Solution # 1 being displayed:



You can see the full pallet load in the top left hand corner, a single pallet layer in the bottom left hand corner, a bundle (with the straps on it) in the middle and a single flatblank in the bottom right hand corner.

Multi-Viewer Graphics features are the same as the other program groups.

Folding Carton Arrange

The Folding Carton Arrange programs are for building bundles of flat folded cartons, and then arranging these bundles into cases, and then putting these cases onto pallets. There are two modules for new case sizes and 3 modules for existing case sizes. These are the options.

- New Cases Sizes, Nested Cartons in Bundles: This program will develop new cases sizes for you by examining your bundle count range, and alternating every other carton in the bundle. So instead of having a bundle with one end larger than the other, your bundle size will be an even thickness. The program then takes these bundles and loads them into case configurations in a row/column pattern based on the maximum size you have allowed for your case. Then it palletizes your cases for you. The best solution will be the bundle count and case size that gets the most cartons on the pallet load.

- New Cases Sizes, Nested Bundles in Cases: This program will develop new cases sizes for you by examining your bundle count range, creating bundles of each count, and then alternating every other bundle in the case. So if your bundle has 2 different thicknesses, one end of the bundle will be larger than the other and all cartons will be facing the same direction. The program loads the bundles in the case, alternating each bundle, in a row/column pattern based on the maximum size you have allowed for your case. Then it palletizes your cases for you. The best solution will be the bundle count and case size that gets the most cartons on the pallet load.

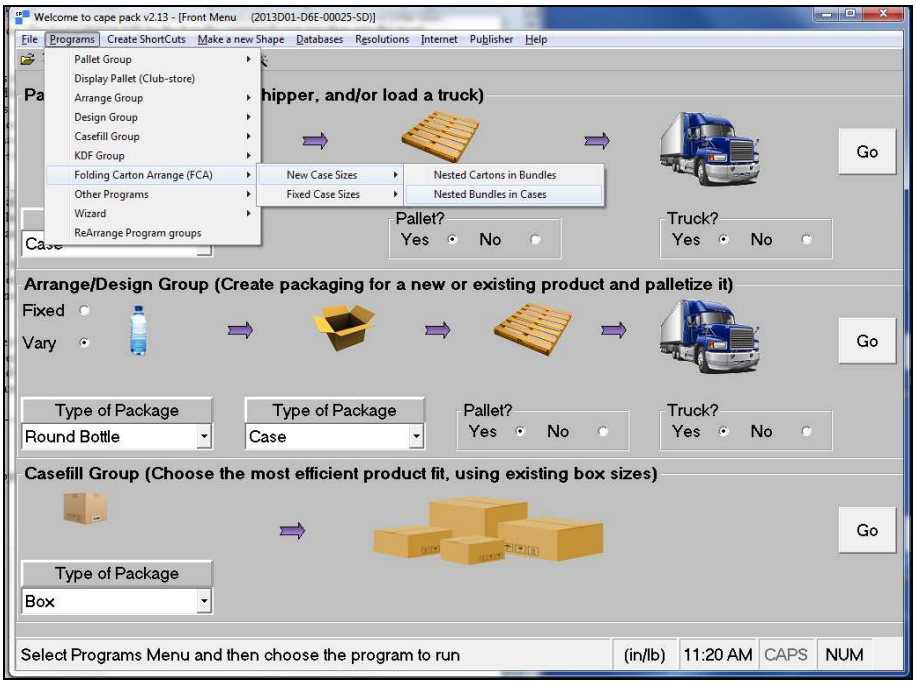
- Fixed Case Sizes, Nested Cartons in Bundles (All Patterns): This program uses the Casefill procedure of filling cases in a current database, using all the pattern types available. It still creates bundles of alternated cartons, but then arranges those bundles in Column, Interlock, Trilock, Spiral, Diagonal and Expanded Spiral patterns within existing cases to see if there is a case that will work. The program palletizes the cases that are acceptable solutions.

- Fixed Case Sizes, Nested Cartons in Bundles (Row/Column): This program uses the Casefill procedure of filling cases in a current database, but uses only Row/Column bundle arrangements. It creates bundles of alternated cartons, and then arranges those bundles in existing cases in the Row/Column pattern. The program palletizes the cases that are acceptable solutions.

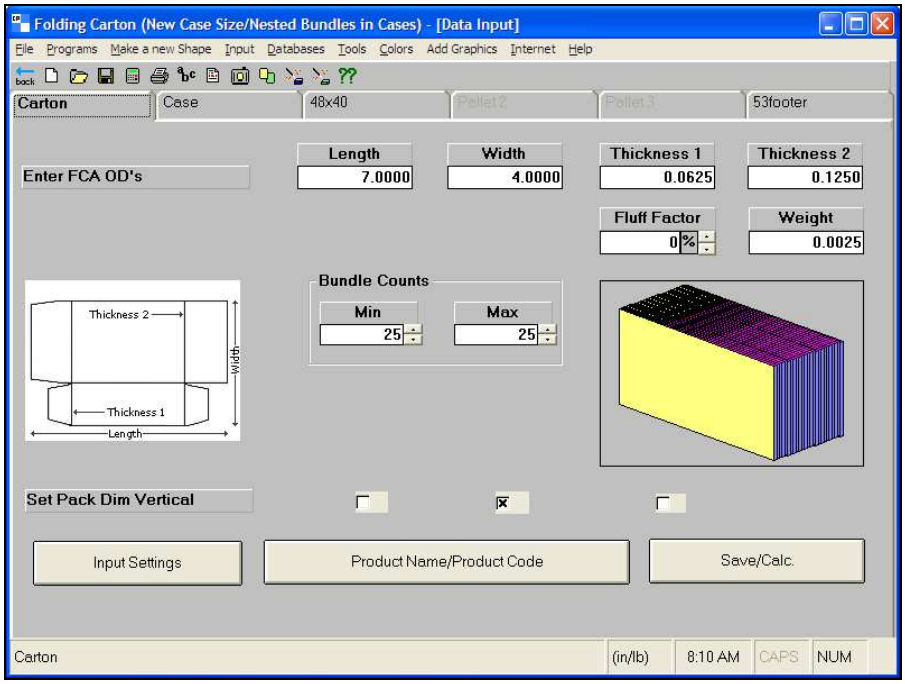
- Fixed Cases Sizes, Nested Bundles in Cases (Row/Column) : This program uses the Casefill procedure of filling cases in a current database, but uses only Row/Column bundle arrangements. It creates bundles of cartons, all facing the same direction in a bundle, and then arranges those bundles in existing cases in the Row/Column pattern. The program palletizes the cases that are acceptable solutions.

Getting Started

Click on the **Programs** menu and then **Folding Carton Arrange (FCA)**, and choose the **New Case Sizes, Nested bundles in Cases**.



The screen will load with default settings and look like the following.



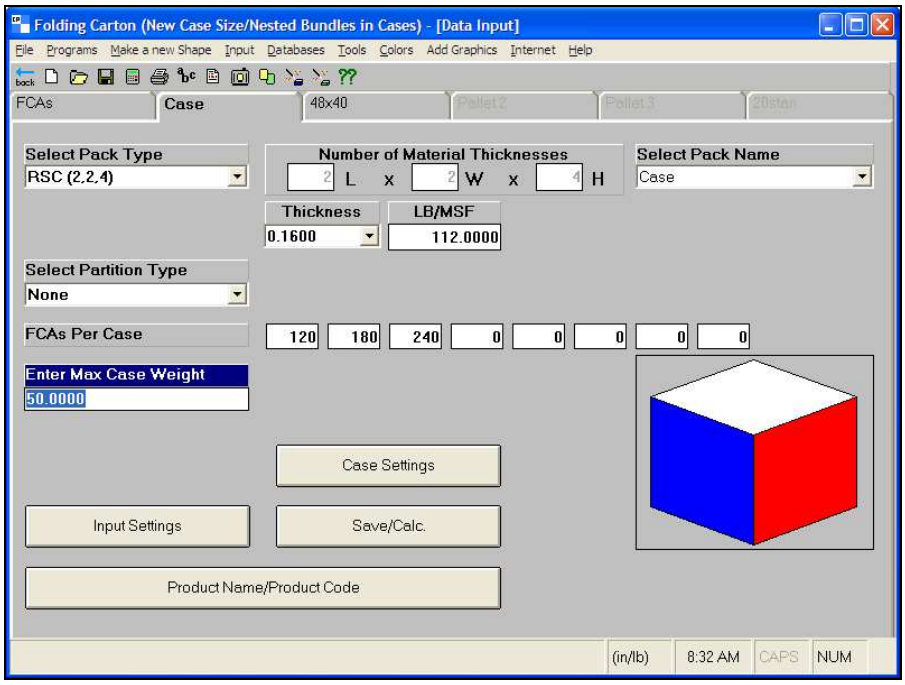
Enter your dimensions. For the **Thickness** fields, if your carton is symmetrical, enter the same thickness for both fields. If your carton is asymmetrical, enter the thickness of one end in the first field and the other end in the second field. When calculating, the program will alternate the cartons to minimize space required. So for example, if you have thicknesses of .5" and 1". The total thickness for 2 cartons together would be 1.5"

Fluff Factor is added in after bundle size is determined and is expressed as a total percentage.

Bundle Counts can be entered as a range or a specific count. You must enter at least 1 for the minimum bundle count.

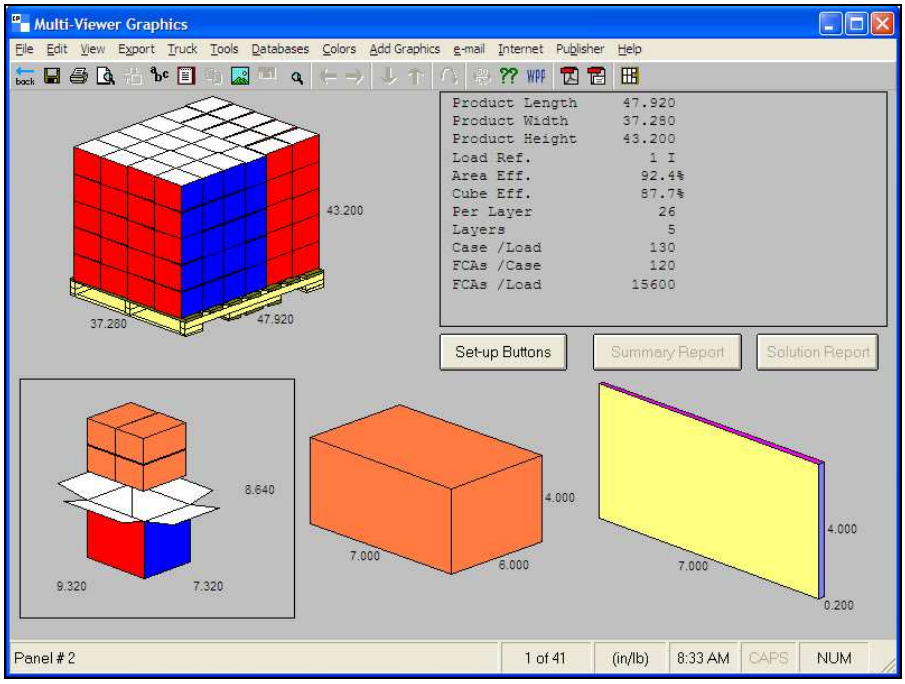
Enter the dimension vertical as you would like the cartons loaded into the case. The default above shows the cartons being loaded on their folded edge into the case.

For your **Case** tab, you can use specific counts for your boxes as shown below, or enter a minimum and maximum quantity per box. Either way, the program will calculate quantities in your bundle count groups.



So for example, if you have bundle count groups of 20 to 25 and case quantities of 100 and 150, the program will calculate how many 20 count bundles will fit in a box of 100, but 20 doesn't go evenly into 150 so that bundle count won't work with the 150 box count. Then it will calculate for 21, 22, 23, 24 and 25 bundle quantities. Any bundle quantities that don't work out even for the 100 or 150 case count will be discarded and your solution report will show only viable options.

Your results are displayed in the normal Multi-Viewer Graphics screen.



Additional Programs and Features

Corrugated Compression Strength

Introduction

The Strength Program allows you to evaluate the effects of a number of loading parameters and environmental conditions on the predicted individual case compression strength and on the resulting stacking height of a pallet load.

The Case Compression Strength program uses the North American version of the universally accepted McKee Formula for calculating initial case compression strength. As input to the calculations, the McKee formula requires the combined board Edge Crush Test (ECT), Caliper (CAL) and Case Perimeter (PER) information.

The McKee formula is expressed as

Compression Strength = 5.874 * ECT * CAL0.508 * PER 0.492

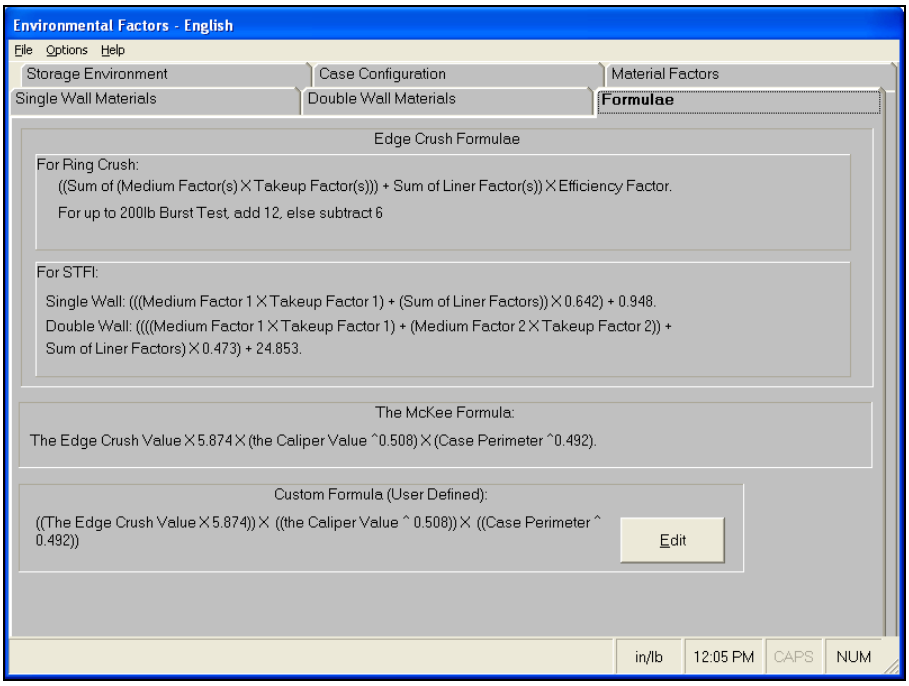
Understanding the Strength Program

The following section describes the North American version of the CAPE PACK Strength program.

In this program, you have access to five databases which provide direct input for the McKee formula calculations. Together these databases make up the **Environmental Data.**

These databases are:

- The Single Wall Materials Database
- The Double Wall Materials Database
- The Storage Environment Database
- The Case Configuration Database
- Material Factors Database



To access these databases from the input screen **Options** menu, select **Show Environmental Data**.

The Single Wall and Double Wall features let you build databases of 200 Single Wall and 100 Double Wall board grade combinations along with their respective descriptions, flute types, caliper and edge crush values

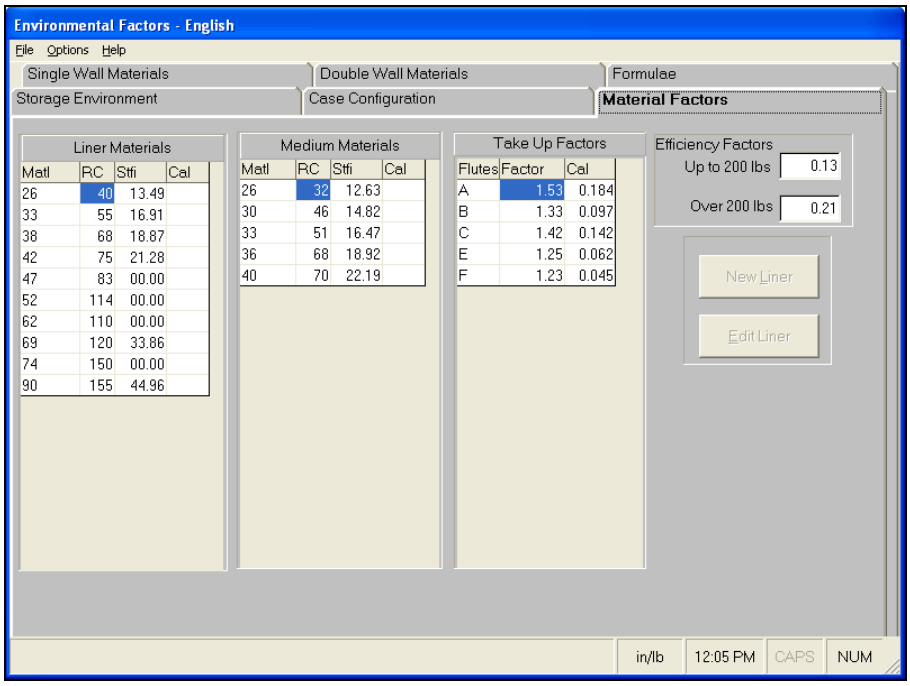
The Storage Environment and Case Configuration Databases contain each of the environmental and case design parameters that can be used to affect the final compression strength value. For each individual parameter you can change the multiplication factor so that the final calculated compression strength matches, as closely as possible, your own distribution environment.

Once you have constructed the databases for your own board grade combinations, environmental factors and case design factors, you can run the Case Compression Analysis with all the relevant information incorporated within the McKee formula.

The McKee formula will calculate the initial case compression strength. The program will then multiply this value by the factors you have specified for the load parameters and environmental conditions. This methodology is designed to accurately predict the case compression strength at the end of your specified time period using the appropriate palletizing information and safety factor.

Material Factors Database

The Material Factors Database contains all of the Liner, Medium, take up and efficiency factors that are used to calculate the combined board edge crush value, from either the ring crush or STFI formulas. For each liner and medium, you can enter a ring crush and/or STFI value and caliper. For take up factors, you can enter any flute type with the corresponding take up factor. For efficiency factors you can enter any value for boards up to 200-pound burst and another for any board over 200 pound burst.



Once entered, these factors are run through the formula on the formulae tab screen and the resulting edge crush value is entered in the appropriate field in the Single Wall or Double Wall database. Material Factors are represented by 1-3 digits and then 1-2 letters. For example, a 23 pound high ring crush liner might be entered as 23HR. So you could feasibly have more than 1 23 pound liner type (i.e., white, kraft, pine liner, etc.). However, you must use the same identifier for your single wall and double wall boards that is used in this list or the program will not recognize it.

Changing your Materials

To modify a liner or medium, double click on the row. Or you can click on the row and then the **Edit...** button.

The material information will appear in a new window for you to edit.

Make your changes to existing entries and click on **OK**.

When you edit the Ring Crush or STFI values of existing materials and click on **Save**, the Edge Crush of any boards in your database that use these materials will automatically be updated.

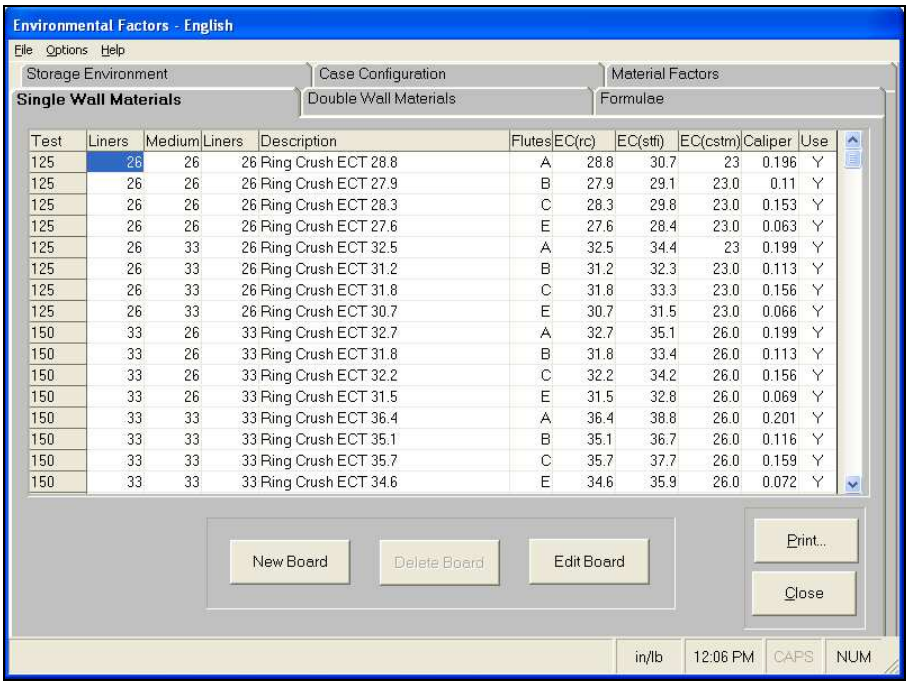
To add materials to the list, click on the appropriate **New...** button.

Enter the appropriate values and click on **OK**. Your list will automatically be updated.

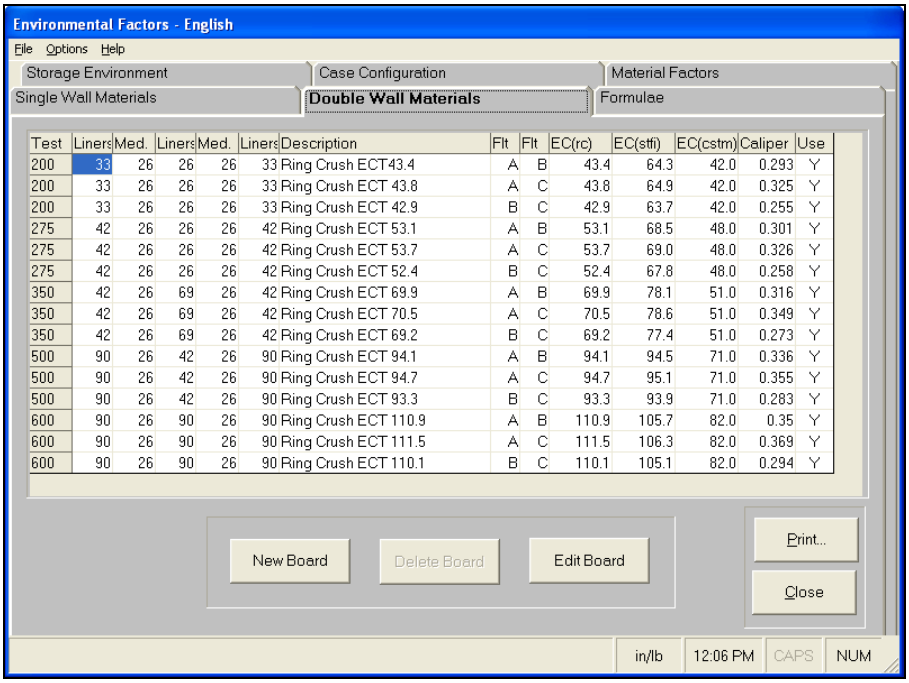
Single Wall and Double Wall Materials Databases

The Single Wall and Double Wall Materials Databases will store your Single Wall and Double Wall combinations along with their respective Description, Flute, Edge Crush and Caliper values.

When calculating initial case compression results, the Edge Crush and Caliper values from the database are used as direct input into the McKee formula. This value is then multiplied by any of the Storage Environment and Case Configuration factors you have selected:



Test	Liners	Medium	Liners	Description	Flutes	EC(rc)	EC(stfi)	EC(cstm)	Caliper	Use
125	26	26	26	Ring Crush ECT 28.8	A	28.8	30.7	23	0.196	Y
125	26	26	26	Ring Crush ECT 27.9	B	27.9	29.1	23.0	0.11	Y
125	26	26	26	Ring Crush ECT 28.3	C	28.3	29.8	23.0	0.153	Y
125	26	26	26	Ring Crush ECT 27.6	E	27.6	28.4	23.0	0.063	Y
125	26	33	26	Ring Crush ECT 32.5	A	32.5	34.4	23	0.199	Y
125	26	33	26	Ring Crush ECT 31.2	B	31.2	32.3	23.0	0.113	Y
125	26	33	26	Ring Crush ECT 31.8	C	31.8	33.3	23.0	0.156	Y
125	26	33	26	Ring Crush ECT 30.7	E	30.7	31.5	23.0	0.066	Y
150	33	26	33	Ring Crush ECT 32.7	A	32.7	35.1	26.0	0.199	Y
150	33	26	33	Ring Crush ECT 31.8	B	31.8	33.4	26.0	0.113	Y
150	33	26	33	Ring Crush ECT 32.2	C	32.2	34.2	26.0	0.156	Y
150	33	26	33	Ring Crush ECT 31.5	E	31.5	32.8	26.0	0.069	Y
150	33	33	33	Ring Crush ECT 36.4	A	36.4	38.8	26.0	0.201	Y
150	33	33	33	Ring Crush ECT 35.1	B	35.1	36.7	26.0	0.116	Y
150	33	33	33	Ring Crush ECT 35.7	C	35.7	37.7	26.0	0.159	Y
150	33	33	33	Ring Crush ECT 34.6	E	34.6	35.9	26.0	0.072	Y



Test	Liners	Med.	Liners	Med.	Liners	Description	Flt	Flt	EC(rc)	EC(stfi)	EC(cstm)	Caliper	Use
200	33	26	26	26	33	Ring Crush ECT43.4	A	B	43.4	64.3	42.0	0.293	Y
200	33	26	26	26	33	Ring Crush ECT 43.8	A	C	43.8	64.9	42.0	0.325	Y
200	33	26	26	26	33	Ring Crush ECT 42.9	B	C	42.9	63.7	42.0	0.255	Y
275	42	26	26	26	42	Ring Crush ECT 53.1	A	B	53.1	68.5	48.0	0.301	Y
275	42	26	26	26	42	Ring Crush ECT 53.7	A	C	53.7	69.0	48.0	0.326	Y
275	42	26	26	26	42	Ring Crush ECT 52.4	B	C	52.4	67.8	48.0	0.258	Y
350	42	26	69	26	42	Ring Crush ECT 69.9	A	B	69.9	78.1	51.0	0.316	Y
350	42	26	69	26	42	Ring Crush ECT 70.5	A	C	70.5	78.6	51.0	0.349	Y
350	42	26	69	26	42	Ring Crush ECT 69.2	B	C	69.2	77.4	51.0	0.273	Y
500	90	26	42	26	90	Ring Crush ECT 94.1	A	B	94.1	94.5	71.0	0.336	Y
500	90	26	42	26	90	Ring Crush ECT 94.7	A	C	94.7	95.1	71.0	0.355	Y
500	90	26	42	26	90	Ring Crush ECT 93.3	B	C	93.3	93.9	71.0	0.283	Y
600	90	26	90	26	90	Ring Crush ECT 110.9	A	B	110.9	105.7	82.0	0.35	Y
600	90	26	90	26	90	Ring Crush ECT 111.5	A	C	111.5	106.3	82.0	0.369	Y
600	90	26	90	26	90	Ring Crush ECT 110.1	B	C	110.1	105.1	82.0	0.294	Y

Changing Board Information

To modify a field, double-click on the row with that board, or click on the row and then on the **Edit Board** button.

Change any information you want in the fields provided and click on **OK**.

Adding Board Grades

To add a board, click on the **New Board** button.

Type in all the information for the board and click on **OK**.

Deleting Board Grades

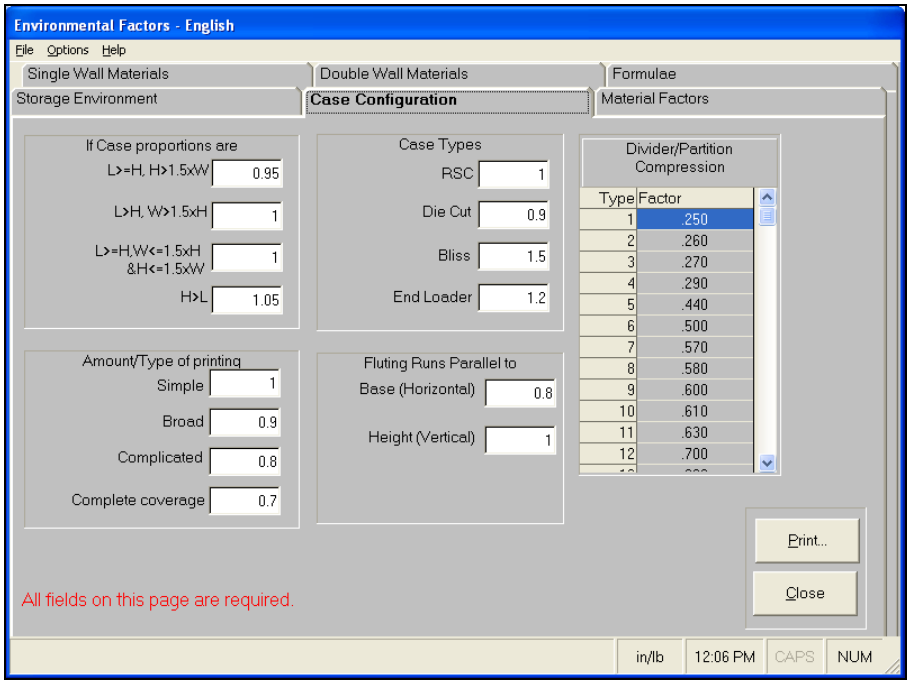
To delete a board from the database, select the row by clicking anywhere on the row. Click on the **Delete Board** button.

To save your changes to the database, click on the **File** menu and then **Close**.

In the main Strength screen, click on the **File** menu and then **Save Local Environmental Data** or **Save Default Environmental Data.**

Case Configuration Factors Database

The Case Configuration factors Database contains all of the case design factors along with their respective values which are used when factoring (multiplying by) the initial calculated compression value. For example, after the strength of a case is computed, that result may be increased or decreased based on how much printing is on the carton, which partition is being used or even what type of case you use. By taking these factors into consideration, the software gives a more "real world" result.

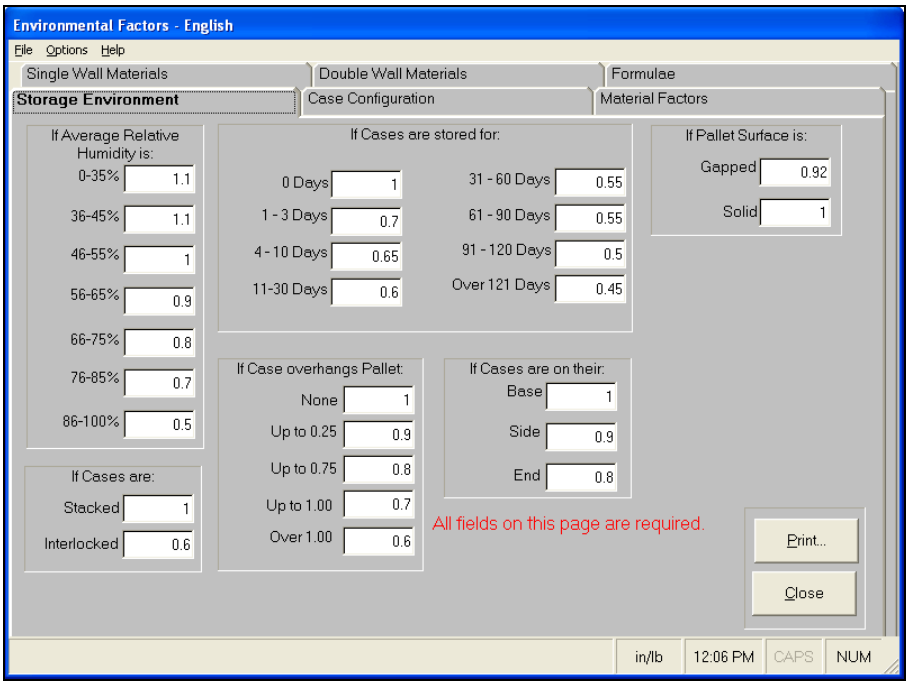


Once you have set the factors within the database to match the type of container you are evaluating, you can predict the required compression strength for a variety of different corrugated box styles and manufacturing methods.

Storage Environment Database

The Storage Environment Database contains all of the environmental factors used in the predicted compression calculations and the respective values that are to be used when factoring (multiplying by) the initial calculated compression value. For example, if you choose a humidity of 90% and the respective factor value is .50, the initially calculated compression strength will be multiplied by .50 (or reduced by 50%) prior to displaying the predicted compression strength.

Once you select a series of environmental factors that will affect the estimated compression strength of the case, the program will use the corresponding numbered value for each of the environmental factors in the compression strength calculations.



Once you have set the factors within your database to match the theoretical conditions to which your corrugated cases will be subjected, it can be used within the initial calculations to replicate your own distribution environment. This will allow you to fine tune your corrugated requirements. Thus, you can ensure that you are only purchasing the strength of corrugated cases that you actually need.

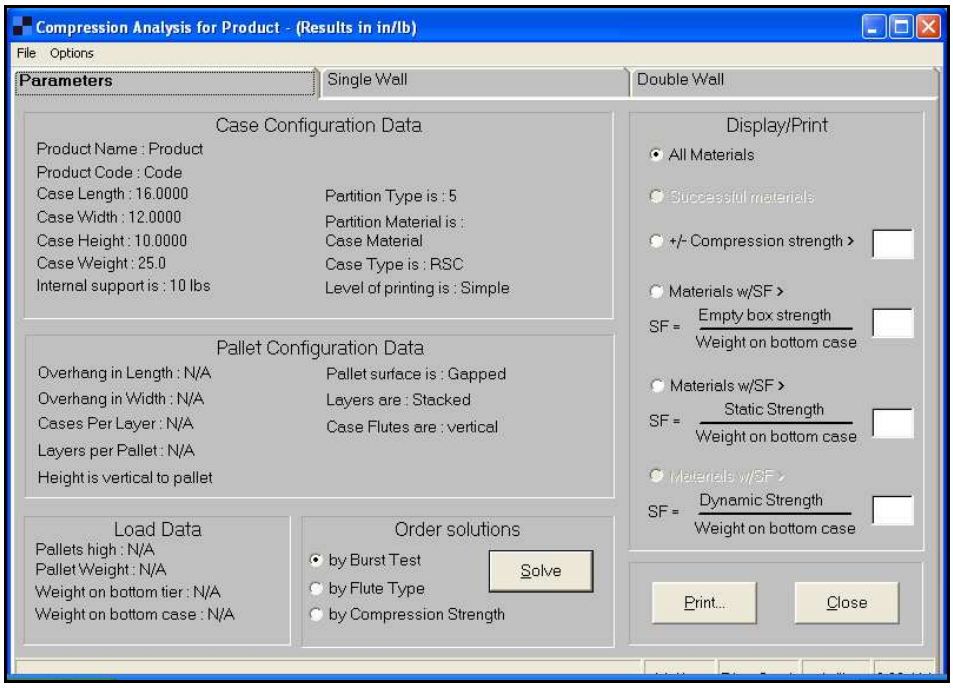
Determining the Strength of a Single Case

To run the single case Strength Analysis option, click on **Programs**, **Other Programs**, **Strength** at the Front Menu screen. The Single Case Compression Strength Analysis is used to simulate in-lab test conditions for a single case using the case depth vertical on a flat pallet.

You will notice that under the **Options** menu, **Work with Case** is checked. This is the default. You can switch to a pallet load analysis by clicking on **Work with Pallet**.

Enter the *Product Name*, *Product Code*, case dimensions, dimension vertical and the *Solution Parameters*. Once all necessary data is entered, the **Solve** button will activate.

Click on **Solve** to calculate compression strength solution information.

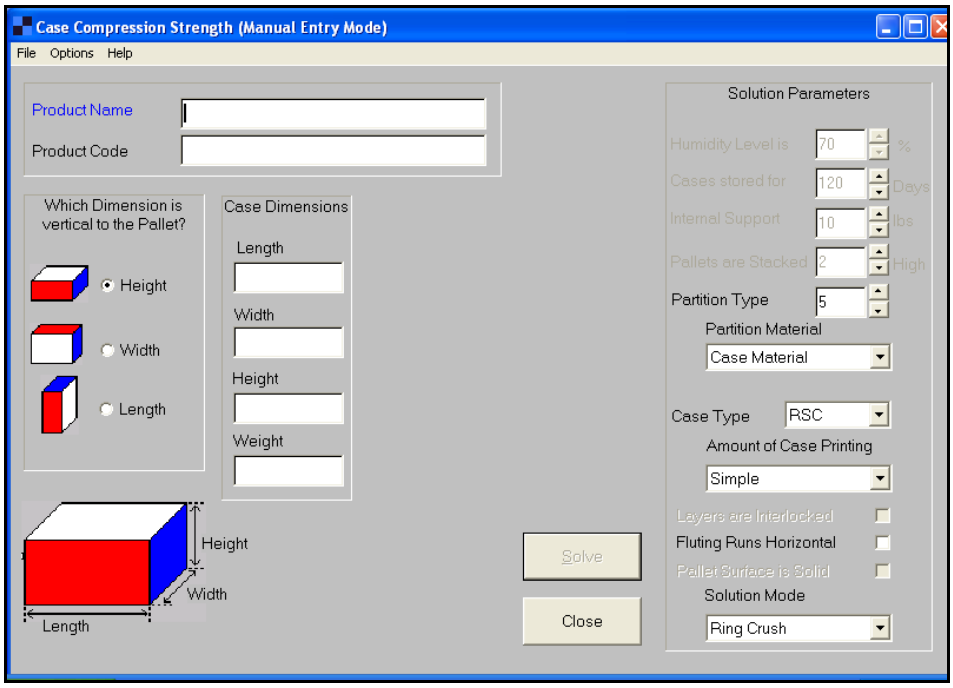


Choose the appropriate *Display/Print* options and click on the Single Wall or Double Wall tabs.

Determining the Strength of a Palletized Case

The Palletized Case analysis is used to simulate a user-defined pallet loading situation where you input the case dimensions. This is useful for calculating compression strength and safe pallet load stacking heights for a particular pallet load configuration without having to run a palletizing analysis or if you only have limited palletizing information. It can also be used to plan 'what if' situations for potential pallet configurations when exact dimensions may not be known.

To run a Strength analysis on a palletized case, select **Strength** from the **Programs** menu, **Other Programs** at the Front Menu screen. The following screen will appear.



Click on the **Options** menu and **Work with Pallet**. The screen changes.

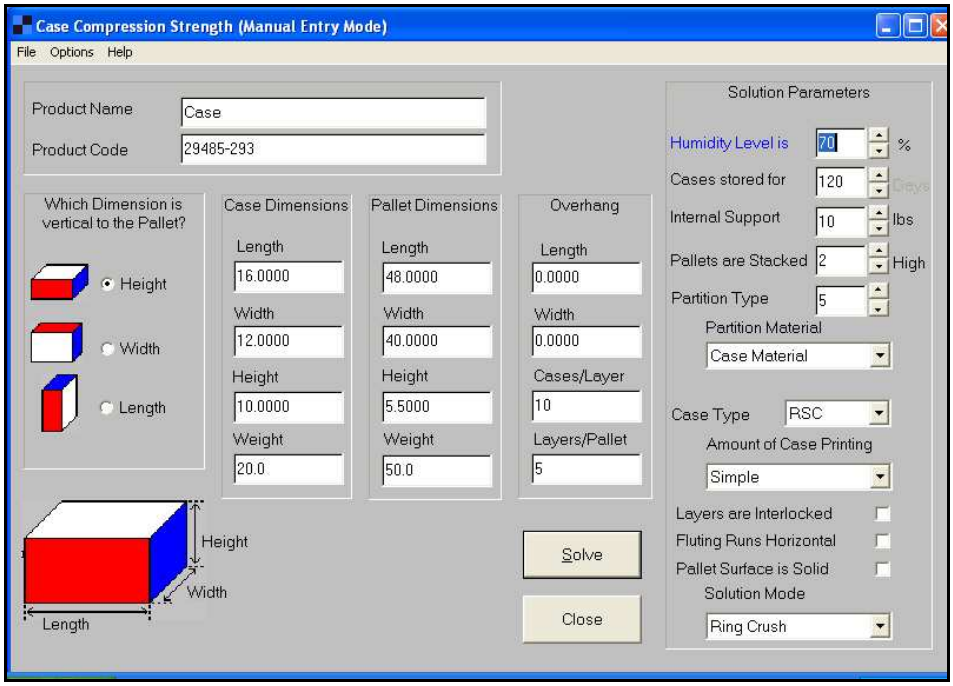
Enter your case dimensions and weight.

Enter your Pallet Dimensions and weight. This information refers to the pallet itself, not the load.

Enter any overhang.

Enter the number of cases on a single layer of the load and the number of layers on the pallet.

Last, enter your *Solution Parameters*.



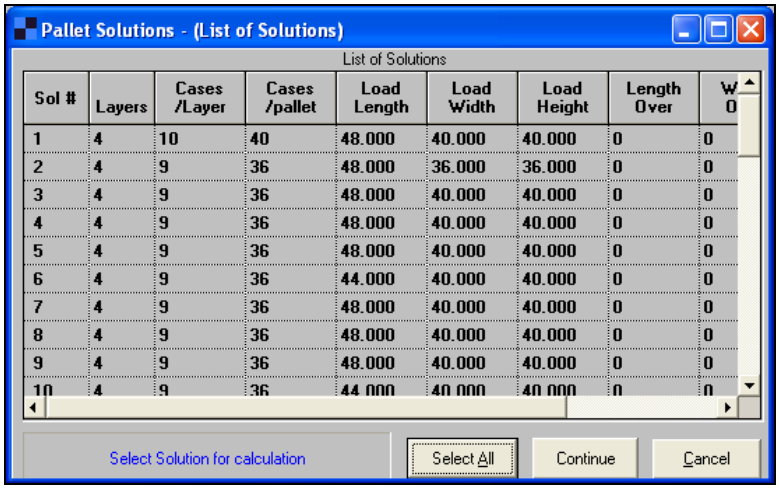
Click on the **Solve** button to view the Parameters tab.

Click on the Single Wall or Double Wall tabs to see calculated strengths of the different boards in those databases. You will notice that Dynamic Strength is now filled in. This represents the Strength of your palletized load with the factors for humidity, days in storage, etc. included.

Determining Strength for a CAPE PACK Solution

The program can calculate the strength of a load designed in Pallet Group for cases, the Arrange Group, or the Design Group. The program cannot reliably calculate the strength of a mixed load or of a load that uses trays rather than cases.

Start the Strength program by clicking on **Strength** on the **Tools** menu in Multi-Viewer Graphics after calculating solutions for Pallet, Arrange or Design. You will be presented with the following screen.



Sol #	Layers	Cases /Layer	Cases /pallet	Load Length	Load Width	Load Height	Length Over	W O
1	4	10	40	48.000	40.000	40.000	0	0
2	4	9	36	48.000	36.000	36.000	0	0
3	4	9	36	48.000	40.000	40.000	0	0
4	4	9	36	48.000	40.000	40.000	0	0
5	4	9	36	48.000	40.000	40.000	0	0
6	4	9	36	44.000	40.000	40.000	0	0
7	4	9	36	48.000	40.000	40.000	0	0
8	4	9	36	48.000	40.000	40.000	0	0
9	4	9	36	48.000	40.000	40.000	0	0
10	4	9	36	44.000	40.000	40.000	0	0

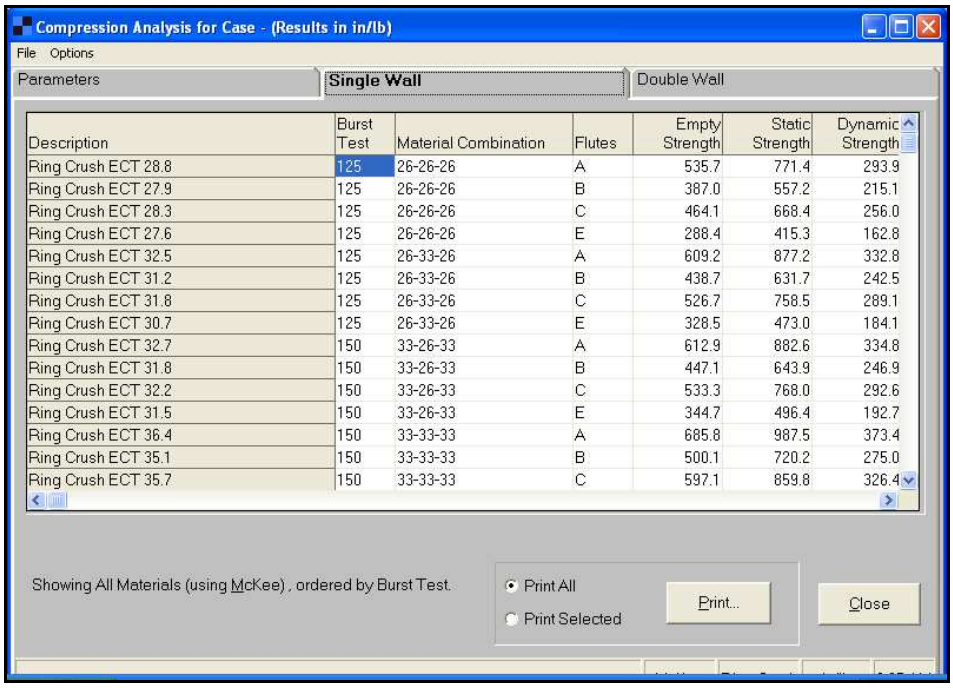
Click on the solution number to highlight the row(s) you want to evaluate and then click on **Continue**. The Case Compression Strength input screen will be displayed. All of the Case, Pallet and Load information has been entered for you.

Enter your Solution Parameters information.

Reviewing the Results

If you do not agree with the values shown or would like to investigate another set of circumstances, you can either change these inputs or modify the appropriate factors. Regardless of which compression analysis program option you run, the calculated compression strengths for each board grade selected from the database will be displayed on these tabs.

Click on the Single Wall tab and the Solution Report will display all the board grades in the database along with their respective compression strengths.



Description	Burst Test	Material Combination	Flutes	Empty Strength	Static Strength	Dynamic Strength
Ring Crush ECT 28.8	125	26-26-26	A	535.7	771.4	293.9
Ring Crush ECT 27.9	125	26-26-26	B	387.0	557.2	215.1
Ring Crush ECT 28.3	125	26-26-26	C	464.1	668.4	256.0
Ring Crush ECT 27.6	125	26-26-26	E	288.4	415.3	162.8
Ring Crush ECT 32.5	125	26-33-26	A	609.2	877.2	332.8
Ring Crush ECT 31.2	125	26-33-26	B	438.7	631.7	242.5
Ring Crush ECT 31.8	125	26-33-26	C	526.7	758.5	289.1
Ring Crush ECT 30.7	125	26-33-26	E	328.5	473.0	184.1
Ring Crush ECT 32.7	150	33-26-33	A	612.9	882.6	334.8
Ring Crush ECT 31.8	150	33-26-33	B	447.1	643.9	246.9
Ring Crush ECT 32.2	150	33-26-33	C	533.3	768.0	292.6
Ring Crush ECT 31.5	150	33-26-33	E	344.7	496.4	192.7
Ring Crush ECT 36.4	150	33-33-33	A	685.8	987.5	373.4
Ring Crush ECT 35.1	150	33-33-33	B	500.1	720.2	275.0
Ring Crush ECT 35.7	150	33-33-33	C	597.1	859.8	326.4

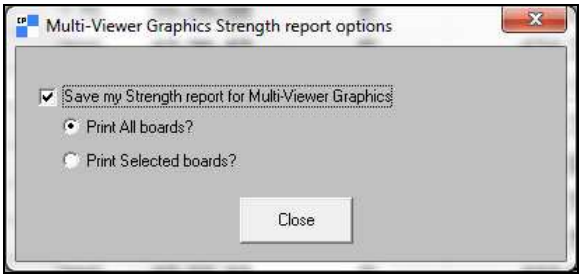
You can scroll through the table by using the arrows on the right-hand side of the screen.

Solution Report Information

The new information calculated from your input data is as follows.

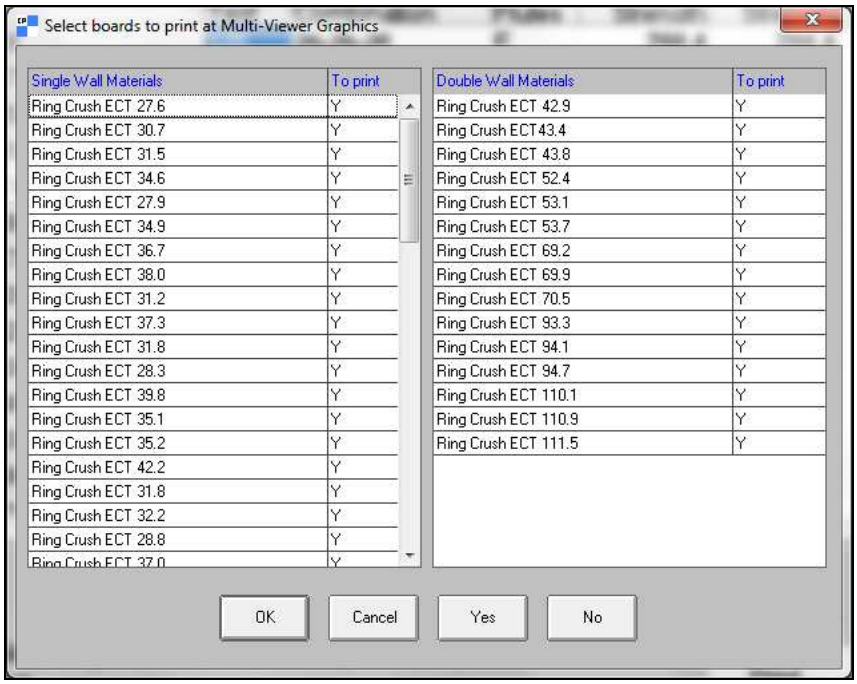
Safety Factor	This column added only if a Safety Factor has been selected on the Parameters tab.
Empty Strength	The case compression strength (lbs.) calculated as if the case were brand new or in a laboratory test environment at optimum conditions. It is derived from the McKee formula value multiplied by factors for flute direction, case position, case proportions and case type.
Static Strength	The empty case strength plus the printing and divider/partition factors.
Dynamic Strength	Compression Strength of the case remaining at the number of days you specified on the Solution Parameters input tab. This value is derived by taking the static value and multiplying it by each factor selected (e.g., humidity, days of storage, overhang, dimension vertical, pallet surface type, interlocked layers and additional internal support). It does take into account the number of pallet loads high specified. That parameter is used for sorting successful from unsuccessful materials.
Loads High	This figure represents the number of loads high you can stack this case under the environmental conditions you requested. It is determined using the Dynamic Strength of the case.

When you click on **Close**, the program will prompt you about saving your data for your graphical solution report.



If you want to save the data for inclusion in your normal CAPE PACK report from the MultiViewer Graphics screen, mark that option. Then you can select if you want to print all boards or only the ones you selected. If you simply chose to print successful materials, that will be considered “selected” boards by the program.

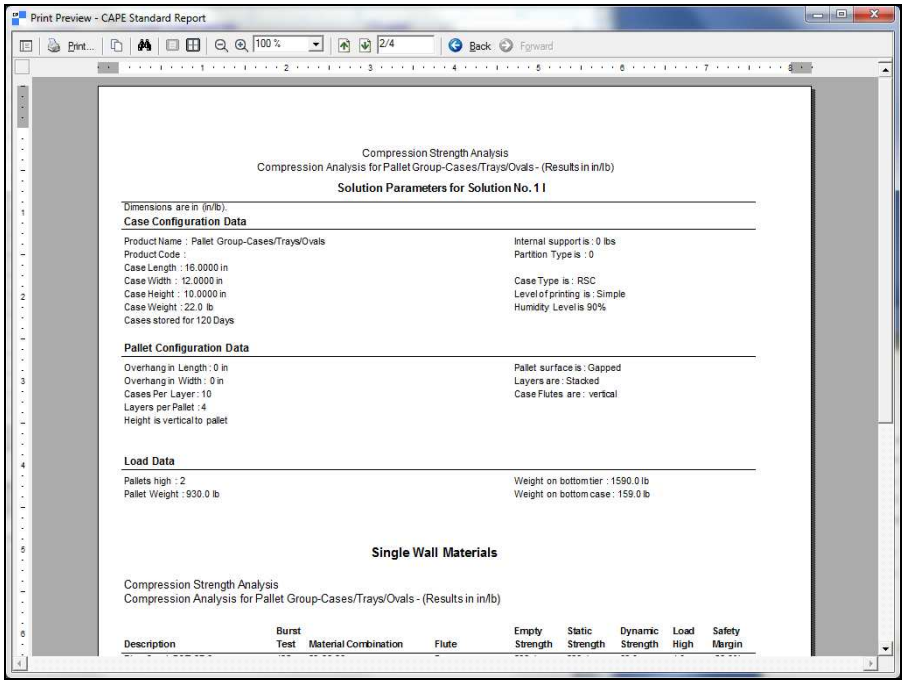
If you choose to Print Selected boards, the following screen will appear when you click on Close.



Single Wall Materials	To print
Ring Crush ECT 27.6	Y
Ring Crush ECT 30.7	Y
Ring Crush ECT 31.5	Y
Ring Crush ECT 34.6	Y
Ring Crush ECT 27.9	Y
Ring Crush ECT 34.9	Y
Ring Crush ECT 36.7	Y
Ring Crush ECT 38.0	Y
Ring Crush ECT 31.2	Y
Ring Crush ECT 37.3	Y
Ring Crush ECT 31.8	Y
Ring Crush ECT 28.3	Y
Ring Crush ECT 39.8	Y
Ring Crush ECT 35.1	Y
Ring Crush ECT 35.2	Y
Ring Crush ECT 42.2	Y
Ring Crush ECT 31.8	Y
Ring Crush ECT 32.2	Y
Ring Crush ECT 28.8	Y
Ring Crush ECT 37.0	Y

Double Wall Materials	To print
Ring Crush ECT 42.9	Y
Ring Crush ECT43.4	Y
Ring Crush ECT 43.8	Y
Ring Crush ECT 52.4	Y
Ring Crush ECT 53.1	Y
Ring Crush ECT 53.7	Y
Ring Crush ECT 69.2	Y
Ring Crush ECT 69.9	Y
Ring Crush ECT 70.5	Y
Ring Crush ECT 93.3	Y
Ring Crush ECT 94.1	Y
Ring Crush ECT 94.7	Y
Ring Crush ECT 110.1	Y
Ring Crush ECT 110.9	Y
Ring Crush ECT 111.5	Y

Your CAPE PACK graphical solution report will include the Strength data on additional pages.



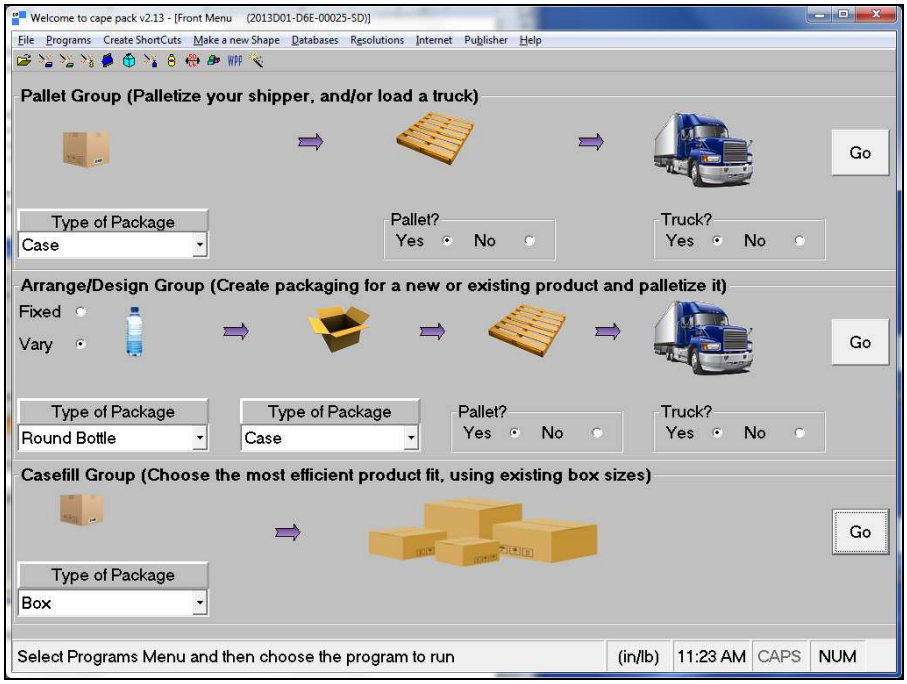
Casefill Case Consolidation

Introduction

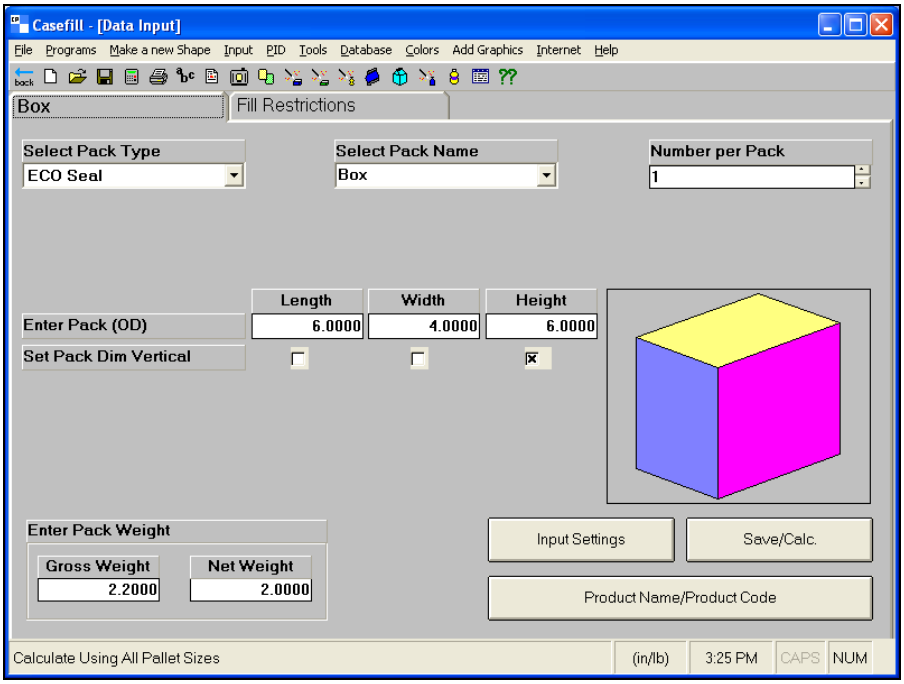
Casefill is a type of case consolidation program. It allows you to evaluate the use of existing secondary pack (case/tray) sizes for packing and distribution of a particular primary package size. Therefore, it can be used in any secondary package/case consolidation effort.

Even the largest companies will be looking to maintain relatively few standard case sizes, which could ultimately hold a majority of their products. Typically the 80/20 rule (80% of revenue generated by 20% of the product range) governs which case sizes are likely to be retained. These cases, in addition to the industry-standard modular case sizes, will form the typical initial database entries, but each company may have different needs.

From the Casefill Group section of the Front Menu, choose **Carton** from the *Type of Pack* drop down list and click on **Go**. Or you can use the **Programs** menu to select the group and module you want to use.



The first data input screen will appear with your Default Settings loaded.



:

All of the normal CAPE PACK menu options are available here. You can build your own list of **Material Thicknesses** and **Pack Names,** edit **User Text** and **User Fields** via **Page Setup**, **Change Package Color, Change to Original Colors, Set Custom Colors** or **Add Graphics**.

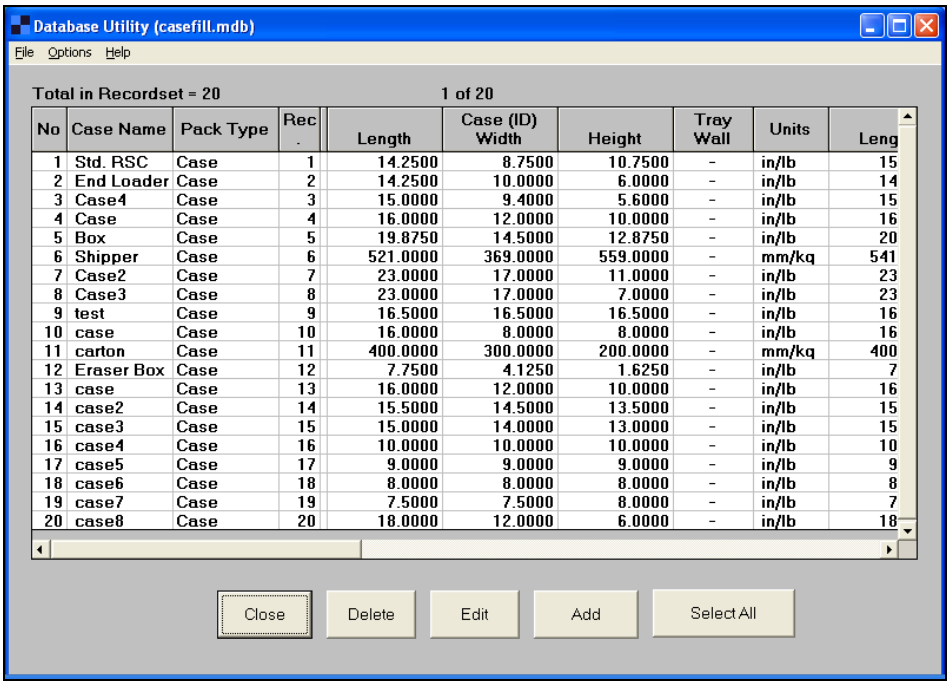
Working with a Casefill Database

To understand how Casefill works you must be aware of the database from which it draws the case and pallet information. You will need to build your own database, or any number of different databases. However, for getting started in Casefill we have provided a small database.

Select the **Database** menu and choose **Open Database**. A dialog box opens.

Select the **casefill.mdb** and then click on **Open**. Behind the input screen the database will be open. The database name will appear in the title bar of your window.

To view the database being used, select **DataBase Utility** from the **Database** menu. Or you can click on the Database Utility toolbar button. The following screen appears.

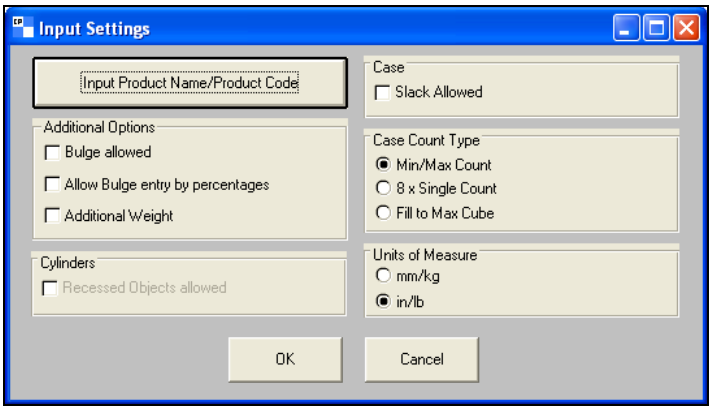


No	Case Name	Pack Type	Rec.	Length	Case (ID) Width	Height	Tray Wall	Units	Leng
1	Std. RSC	Case	1	14.2500	8.7500	10.7500	-	in/lb	15
2	End Loader	Case	2	14.2500	10.0000	6.0000	-	in/lb	14
3	Case4	Case	3	15.0000	9.4000	5.6000	-	in/lb	15
4	Case	Case	4	16.0000	12.0000	10.0000	-	in/lb	16
5	Box	Case	5	19.8750	14.5000	12.8750	-	in/lb	20
6	Shipper	Case	6	521.0000	369.0000	559.0000	-	mm/kg	541
7	Case2	Case	7	23.0000	17.0000	11.0000	-	in/lb	23
8	Case3	Case	8	23.0000	17.0000	7.0000	-	in/lb	23
9	test	Case	9	16.5000	16.5000	16.5000	-	in/lb	16
10	case	Case	10	16.0000	8.0000	8.0000	-	in/lb	16
11	carton	Case	11	400.0000	300.0000	200.0000	-	mm/kg	400
12	Eraser Box	Case	12	7.7500	4.1250	1.6250	-	in/lb	7
13	case	Case	13	16.0000	12.0000	10.0000	-	in/lb	16
14	case2	Case	14	15.5000	14.5000	13.5000	-	in/lb	15
15	case3	Case	15	15.0000	14.0000	13.0000	-	in/lb	15
16	case4	Case	16	10.0000	10.0000	10.0000	-	in/lb	10
17	case5	Case	17	9.0000	9.0000	9.0000	-	in/lb	9
18	case6	Case	18	8.0000	8.0000	8.0000	-	in/lb	8
19	case7	Case	19	7.5000	7.5000	8.0000	-	in/lb	7
20	case8	Case	20	18.0000	12.0000	6.0000	-	in/lb	18

Here you can view the information for each record or you can modify an existing database.

Primary Pack Information

Click on the **Input Settings** button.



For this analysis, your options should be set as indicated above.

Click on **OK**.

Click on the **Product Name/Product Code** button.

Enter your **Product Name** and **Product Code** and click on **OK**.

Select a **Seal End** carton for the *Primary Pack Type*.

Select **Carton** from the list box for *Pack Name*.

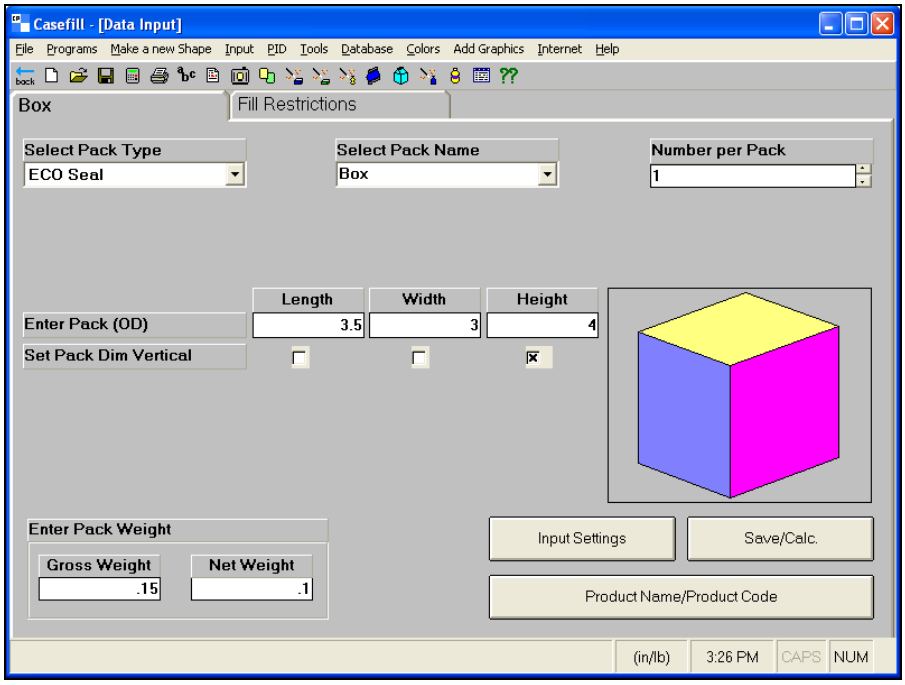
For *Number per Pack*, enter the value **1** if you are dealing with individual products.

Enter the outside dimensions for the primary pack as **3.5** length, **3** width and **4** height.

Specify **Width** and **Height** as the Dimensions Allowed Vertical to the Case.

Enter the *Gross Weight* of the product as **0.15** pounds.

Enter the *Net Weight* of the product as **0.1** pounds. Your completed screen should look like this.



Fill Restrictions

Click on the Fill Restrictions tab.

Enter **50** pounds as the *Maximum Case Weight.*

Mark **Simple**, **Medium** and **Complex** for the *Pattern Types to be Used*. Casefill actually builds pallet patterns inside the respective case sizes within the database. The valid styles of primary package arrangement are:

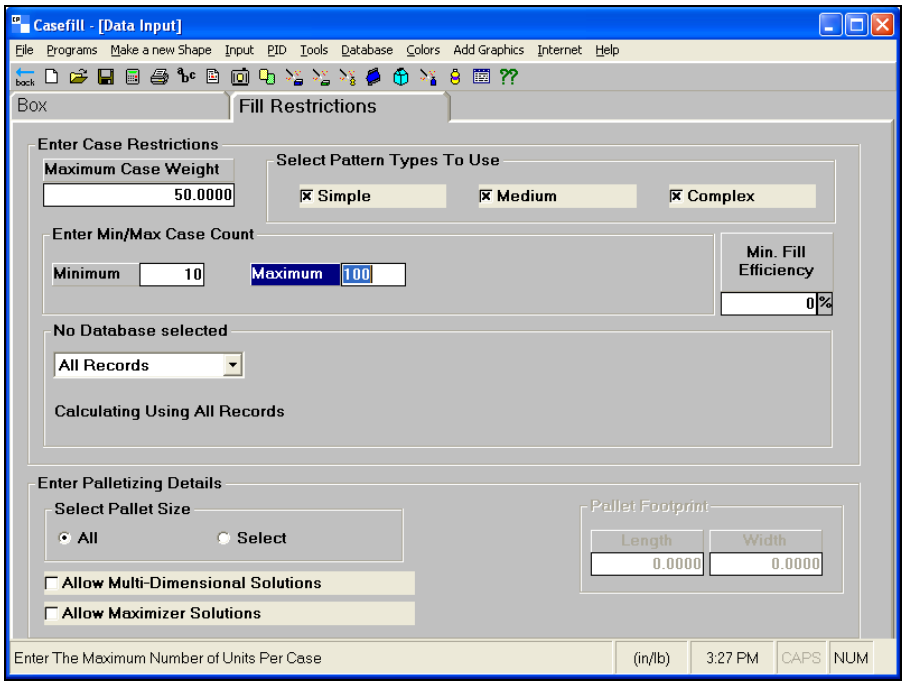
- **Simple** corresponds to the Column and Interlock palletizing styles.
- **Medium** corresponds to Trilock and Diagonal
- **Complex** corresponds to Spiral and Expanded Spiral.

Enter a Minimum of **10** and a Maximum of **100** items per case in the *Min/Max Case Count* fields.

To use all of the secondary packs in the database, select **All Records** from the drop down list.

For *Palletizing Details* you can either select all of the pallet sizes, or you can specify one footprint that you want to consider. We will look at all pallets, so mark the appropriate block.

Casefill can consider more complex options such as two or more primary package dimensions vertical in the case. Mark the **Multi-Dimensional Solutions** field.

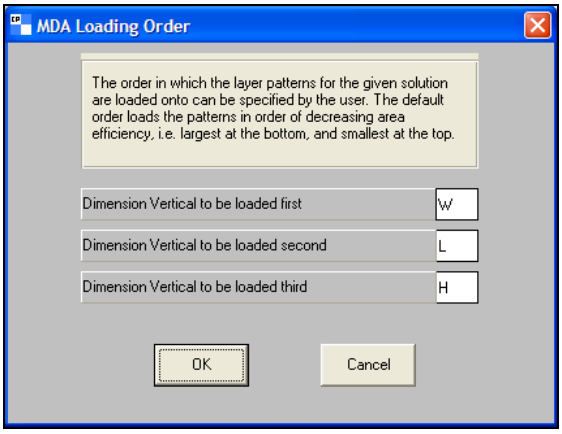


Getting Results

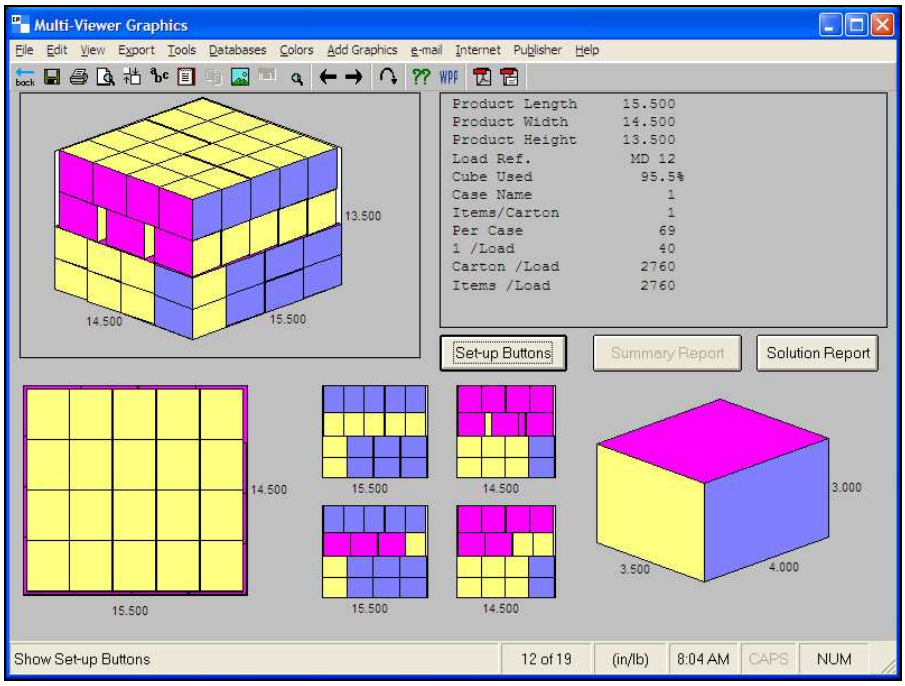
To save your data and calculate solutions, click on the **Save/Calc**. button on the primary pack tab. Or you can choose **Save Input Data & Calculate** from the **File** menu. Either way, a Save As dialog box appears.

Enter a file name (say casefill) and click on **Save.**

After calculations, you will see the following screen.



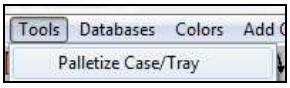
Click on **OK** to continue on to Multi-Viewer Graphics.



All of the Solution Report, and Multi-Viewer Graphics features also apply to Casefill.

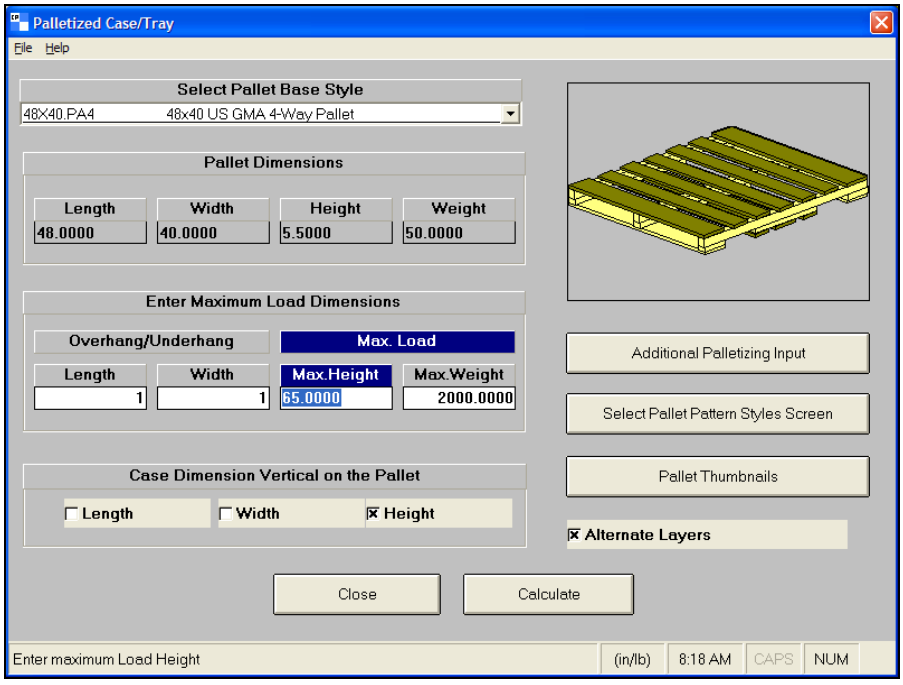
Palletizing in Casefill

After calculating, click on the **Tools** menu to access this feature.

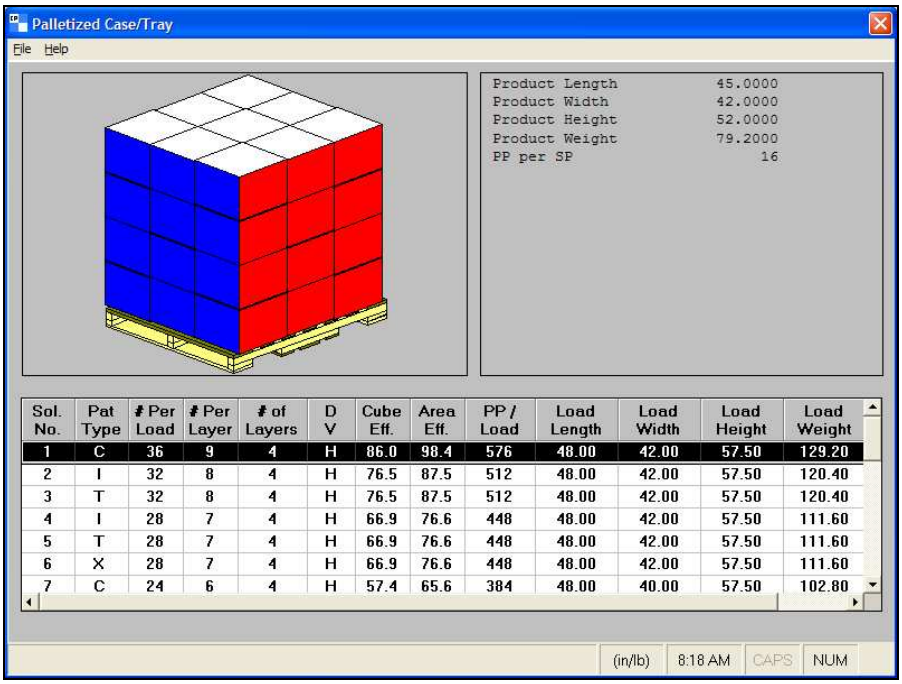


The standard CAPE PACK palletization screen appears with all the normal palletizing options.

Make your changes as required and click on the **Calculate** button.

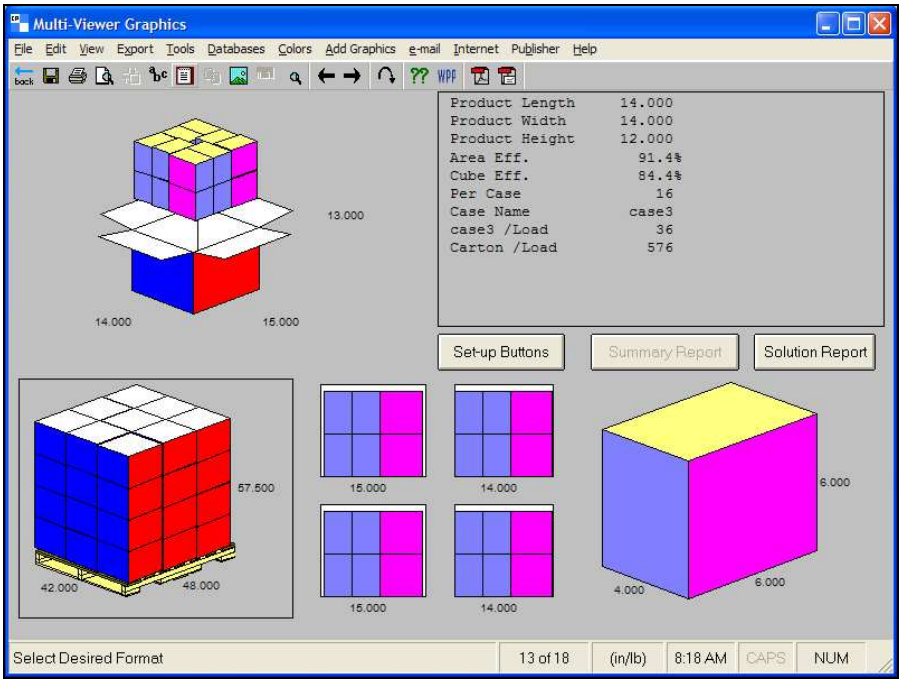


Options to palletize your case appear on the screen.



Sol. No.	Pat Type	# Per Load	# Per Layer	# of Layers	D V	Cube Eff.	Area Eff.	PP / Load	Load Length	Load Width	Load Height	Load Weight
1	C	36	9	4	H	86.0	98.4	576	48.00	42.00	57.50	129.20
2	I	32	8	4	H	76.5	87.5	512	48.00	42.00	57.50	120.40
3	T	32	8	4	H	76.5	87.5	512	48.00	42.00	57.50	120.40
4	I	28	7	4	H	66.9	76.6	448	48.00	42.00	57.50	111.60
5	T	28	7	4	H	66.9	76.6	448	48.00	42.00	57.50	111.60
6	X	28	7	4	H	66.9	76.6	448	48.00	42.00	57.50	111.60
7	C	24	6	4	H	57.4	65.6	384	48.00	40.00	57.50	102.80

Select the load you wish and then close this screen to update Multi-Viewer Graphics. All normal viewing and load formatting options are available.



Creating Loads with Different Sized Cases

Using Display Pallet

Start Display Pallet by clicking on the **Mixed** indicator, **Yes** for both Pallets and Trucks and then the **Go** button.

Let's imagine that we are a food manufacturer and a local supermarket has just faxed an order for 2 different beverages, as well as 3 different types of snack foods. They want to have a pallet that they can place directly onto the floor of their supermarket.

Display Pallet appears with your Default Settings already loaded. You will notice that many of the features of this new version are similar to the normal Pallet and Arrange Groups.

Data Input

Click on the **Input Settings** button near the bottom of the screen.

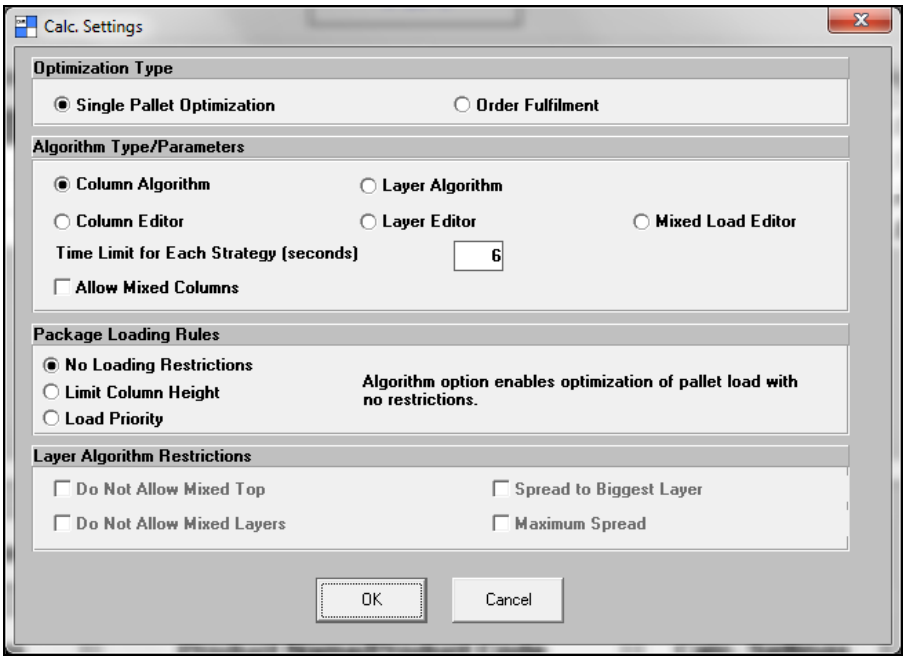
Make sure the following items are marked: **Packages Per Load, Objects onto Pallet into Truck**, and **in/lb**. Click on **OK**.

You can also use the right-click options for these settings. Right click your mouse outside of the "spreadsheet" area to reveal the popup menu.

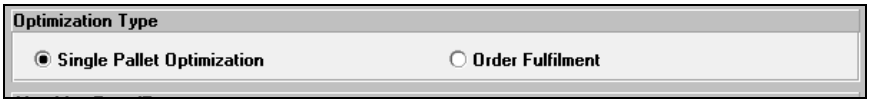
Next we'll give the analysis a name. Click on the **Product Name/Product Code** button and a dialog box appears.

Enter **Supermarket Order** in the *Product Name* field and **2013-0001** in the *Product Code* field. Click on **OK**.

Now that you have defined the problem, you need to establish what type of load you want to build. Click on the **Calc. Settings** button.



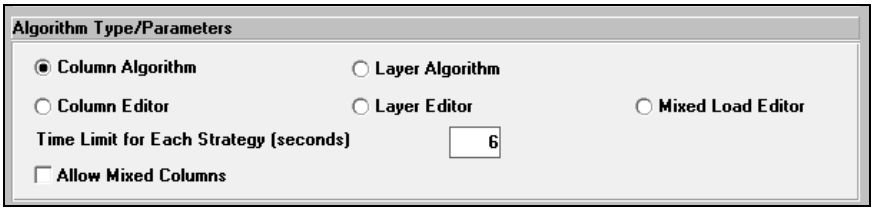
You have a number of options here. At the top you will see Optimization Type.



You can choose between the following options:

- **Single Pallet Optimization** which will give you several options of a single pallet load which might have all of the product included, or may not.
- **Order Fulfillment** which will load all of your product list on as many pallets as are required.

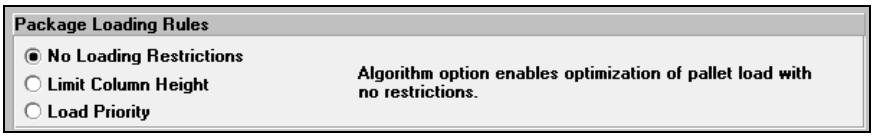
Next you will see Algorithm Type/Parameters



Your choices are:

- **Column Algorithm** which will calculate full loads of your products in a column arrangement. You also have a choice here of allowing mixed columns.
- **Column Editor** allows you to build your own column arrangement loads from scratch.
- **Layer Algorithm** which will calculate full loads of your products in a layer arrangement.
- **Layer Editor** allows you build your own layer arrangement loads from scratch.
- **Mixed Load Editor** allows you build hybrid loads with both columns and layers.

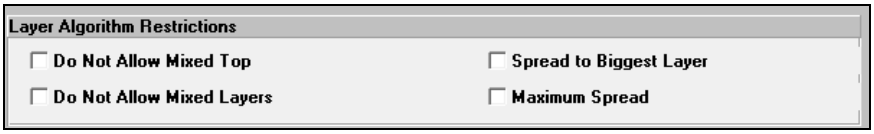
Next you will see Packaging Loading rules



Your choices here are:

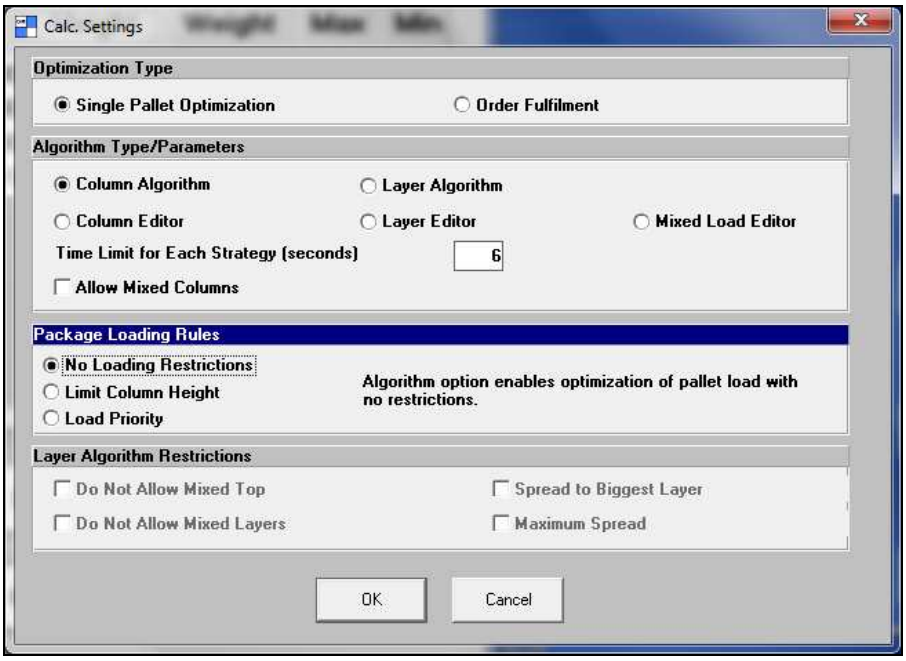
- **No Loading Restrictions** where the algorithm will optimization the pallet load with no restrictions.
- **Limit Column Height** where you can set specific height quantities for each package in your load.
- **Load Priority** where you are allowed to prioritize which boxes go on the load first, second, third, etc.

Last you will see Layer Algorithm Restrictions.



These are self-explanatory and can be applied only to Layer type loads.

Make sure that **Single Pallet Optimization** is marked along with the **Column Algorithm** and **No Loading Restrictions**. Your screen should look like this.

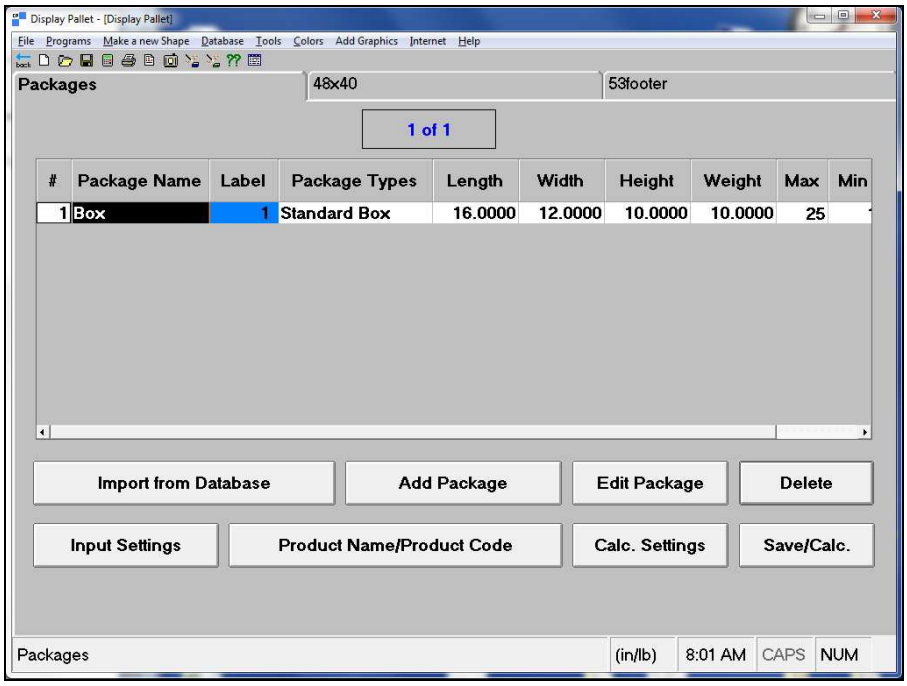


Click on **OK**. You are ready to start entering your data.

Packages Tab

Make sure you are on the tab labeled **Packages**. This is the tab that we will use to enter the items in our list. Our default settings have a few cases already input and we will only be using the first one. Let's delete the other three cases.

Click on package number **2** in the list and then on the **Delete** button. You will be prompted to verify the delete. Click on **Yes**. Repeat this process for the last two cases in the list.



Package 1 – Bagged Chips in a Case

Select box number **1** in the list and then click on **Edit Package**. The package details will appear.

The size of this case is correct, but there are other items we need to change. Tab to the *Package Name* field.

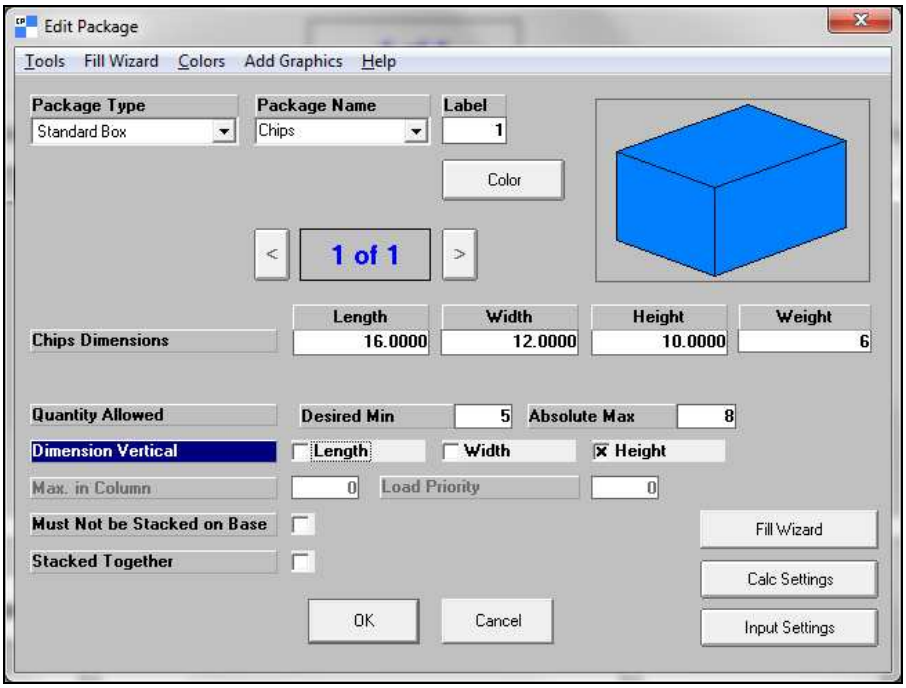
Type in **Chips**. Tab to the *Weight* field.

Enter **6** pounds for the weight of the box.

Tab to the *Desired Min* field. The Supermarket manager has requested **5-8** boxes of these chips. Enter **5** in this field.

Finally, make sure only **Height** vertical to the pallet is marked.

Tab to the *Absolute Max* field and enter **8** here. Your screen should look like this.



Click on the **Fill Wizard** button so we can enter our chip bag arrangement. The Fill Wizard window will open.

From the *Pack Type* list, select the **Chipbag.csf** shape.

Select **Bag** from the *Pack Name* list.

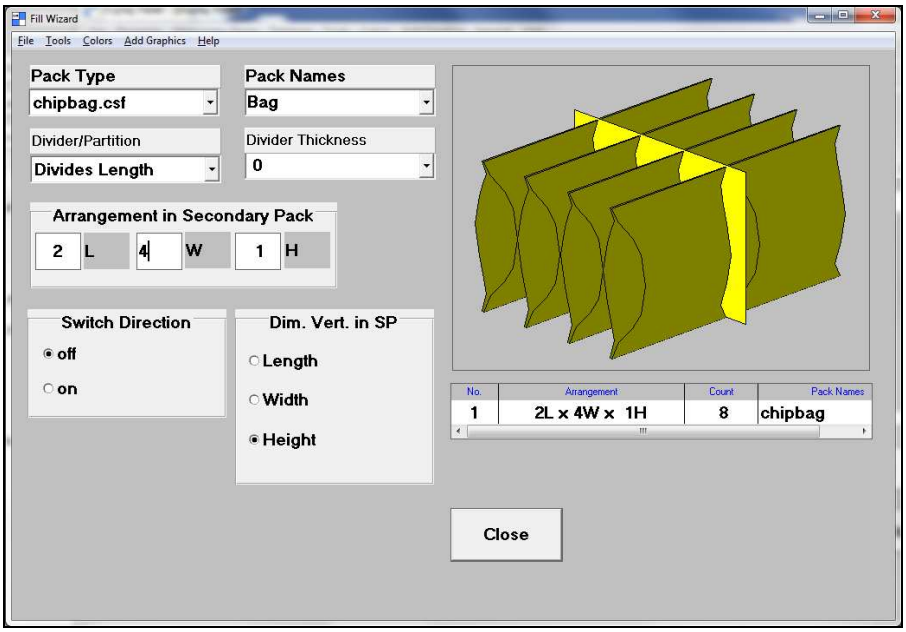
Select **Divides Length** from the *Divider/Partition List* and enter **.1** for the *Material Thickness*.

In the *Arrangement in Secondary Pack* section, enter **2** in the length (L), **4** in the width (W) and **1** in the height (H) fields.

Make sure the *Dim. Vert. in SP* is **Height**.

Last, we will color our bags. Click on the **Color** menu, and **Change Package Color**.

Select a color and click on **OK** to update your bag's appearance. Your screen should look like the following.



Click on **Close** to close the **Fill Wizard** and then **OK** to return to the **Packages** tab.

Package 2 – Boxed Crackers in a Case

Click on **Add Package** to enter the next item. The Add Package windows will appear.

Select **RSC Box** from the *Package Type* list.

Enter **Crackers** in the *Package Name* field.

Enter dimensions as follows in the appropriate fields.

- Length: **12.5**
- Width**: 9.875**
- Height: **13.75**
- Weight: **13**

Enter **10** in both the *Min* and *Max* fields.

Click on the color button and choose a color for your box that differs from the first package you entered.

Make sure only **Height** vertical to the pallet is marked.

Click on the **Fill Wizard** button and tab to Arrangement in Secondary Pack. Since this package is a carton, the defaults work fine.

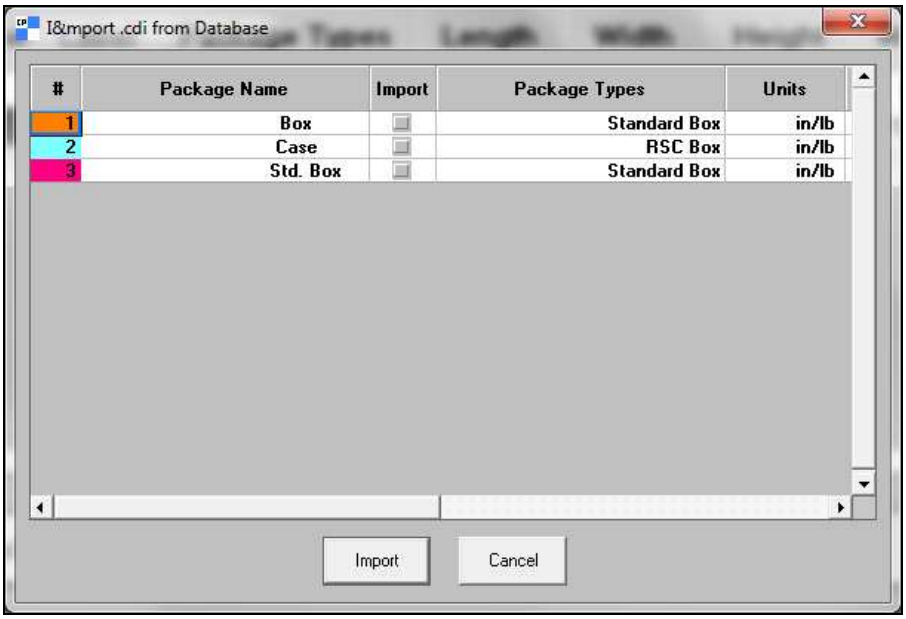
In the *Arrangement in Secondary Pack* section, enter **5** in the length (L), **4** in the width (W) and **1** in the height (H) fields. Click on **Close** to close the **Fill Wizard**, and then **OK** to return to the **Packages** tab.

Package 3 – Candy Pouches in a Case

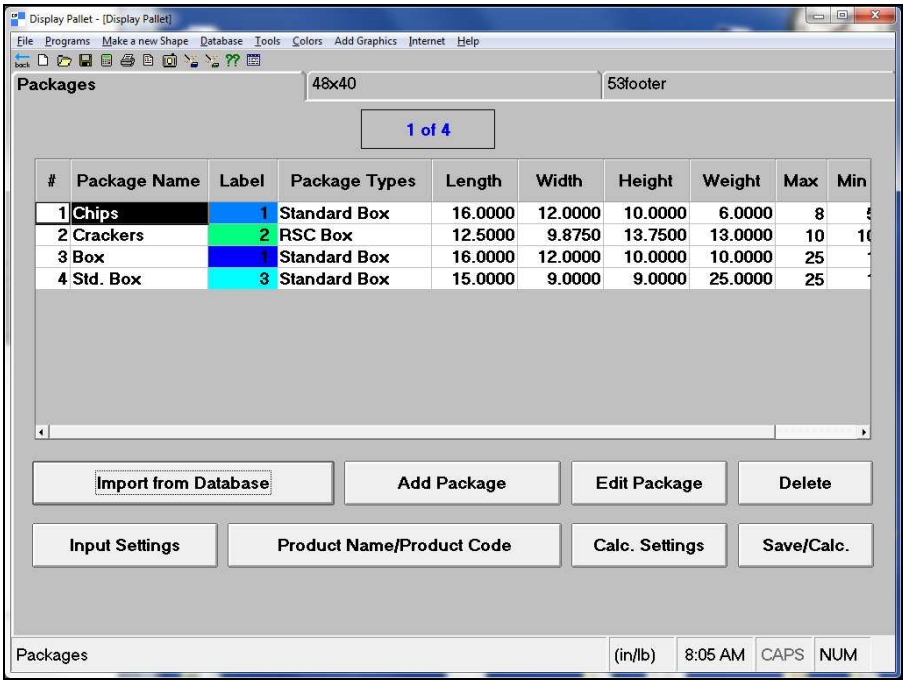
For the next two packages, we will use the database and import some packages to save us time.

Click on **Import from Database**. The following screen appears.

Select **displaypallet.mdb** and then click on **Open**.



Click on the **Import** column next to packages number **1** and **3**, and then click on **Import**.



Click on package number **3**, and then on **Edit Package**. The Edit Package screen will open with package number 3.

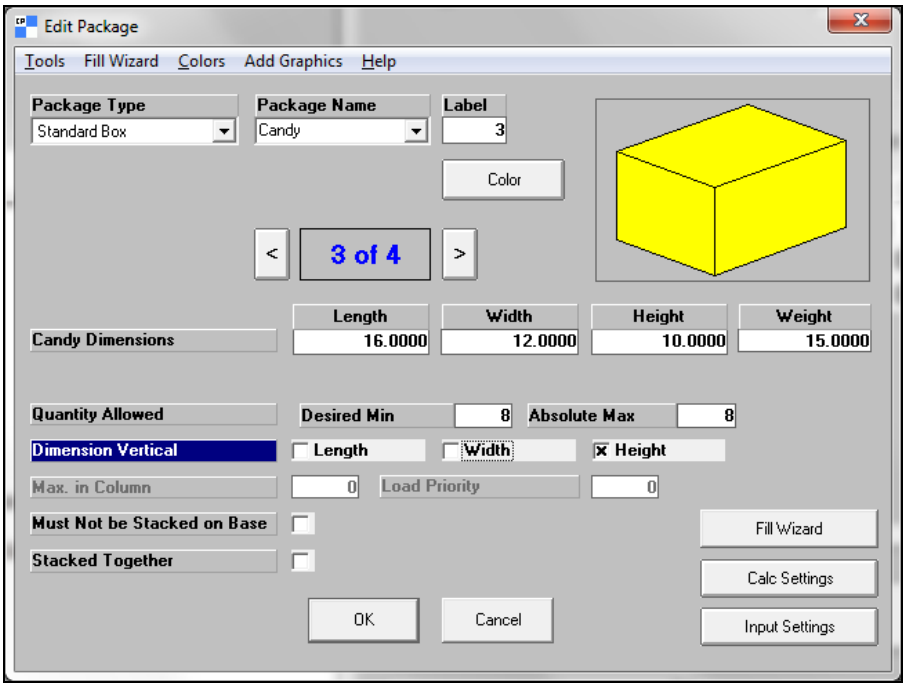
Type in **Candy** and tab to the *Label* field.

Enter **3** and tab to the *Weight* field.

Enter **15** pounds for the weight of the box.

Tab to the *Desired Min* field. Enter **8** for both the *Min* and *Max* quantities.

Select a color different from the first two packages. Your screen should look like this.



Click on the **Fill Wizard** button so we can enter our product arrangement.

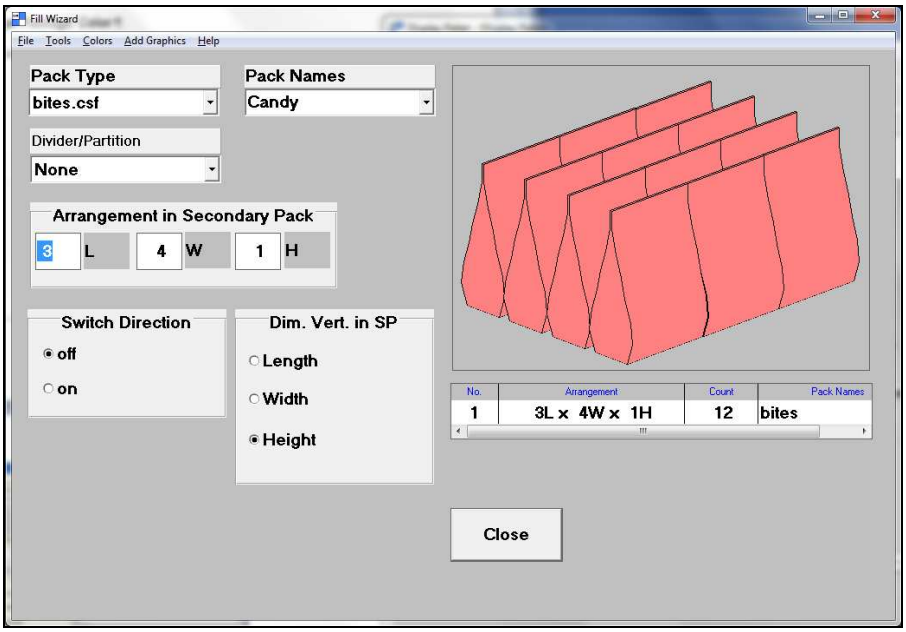
From the *Pack Type* list, select the **bites.csf** shape.

Enter **Candy** for your *Pack Name*, and then tab to the *Arrangement in Secondary Pack* section.

Enter **3** in the length (L), **4** in the width (W) and **1** in the height (H) fields.

Click on the **Color** menu, and **Change Package Color**.

Select a color and click on **OK** to update your bag's appearance. Your screen should look like the following.



Click on **Close** to close the **Fill Wizard** and then the right arrow next to the package number area (3 of 4), to move to the next package.

Package 4 – Bottles of Lemonade

Type in **16 oz.** and tab to the *Label* field.

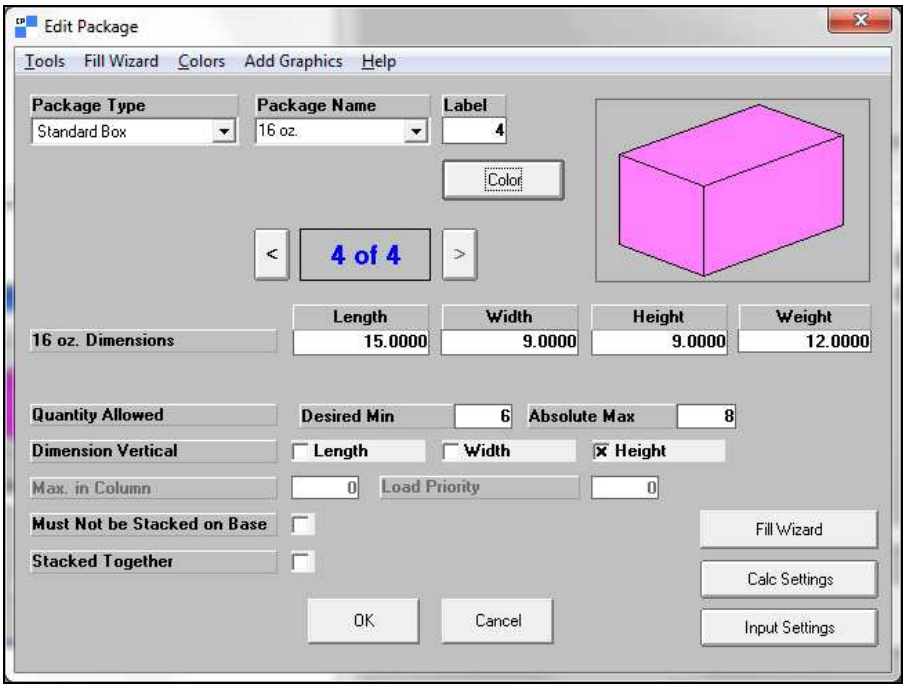
Enter **4** and tab to the *Weight* field.

Enter **12** pounds for the weight of the box.

Tab to the *Desired Min* field. Enter **6** for the *Min* and **8** for the *Max* quantities.

Mark only **Height** vertical to the pallet.

Select a color different from the other packages. Your screen should look like this.

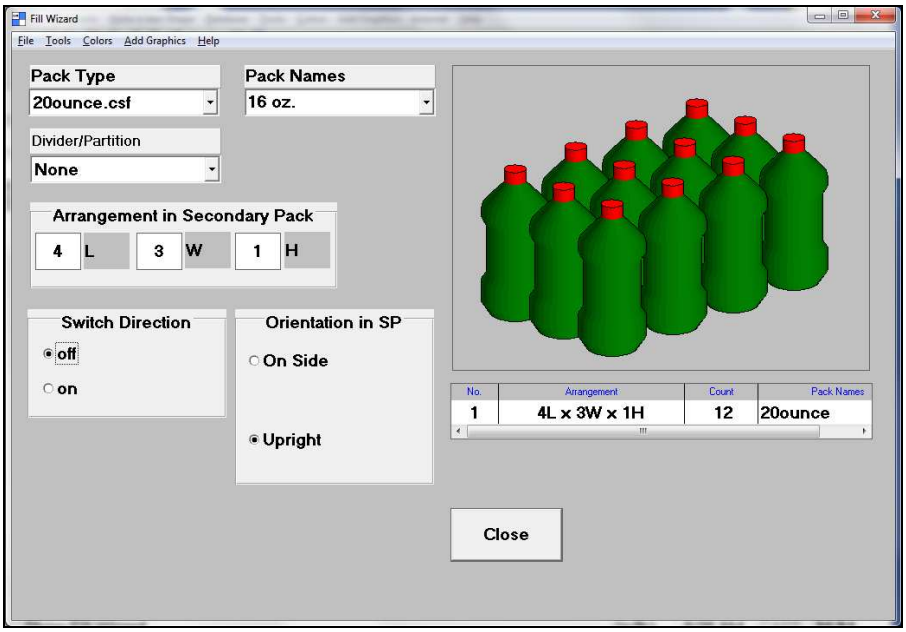


Click on the **Fill Wizard** button so we can enter our product arrangement.

From the *Pack Type* list, select the **20ounce.csf** shape.

Enter **16 oz.** for your *Pack Name*, and then tab to the *Arrangement in Secondary Pack* section.

Enter **4** in the length (L), **3** in the width (W) and **1** in the height (H) fields.



Click on **Close** to close the **Fill Wizard** and then click on **OK** to return to the Packages tab.

Package 5 – Cans of Coffee

The last package is a tray that contains cans of coffee. Click on **Add Package** to add this package to the list.

Select **Tray** from the **Package Type** list, and type in **Coffee** for the **Package Name**.

Enter in **5** for the *Label* and tab to the dimension fields.

Enter the tray dimensions as follows:

Length: **12**

Width: **8**

Height: **8**

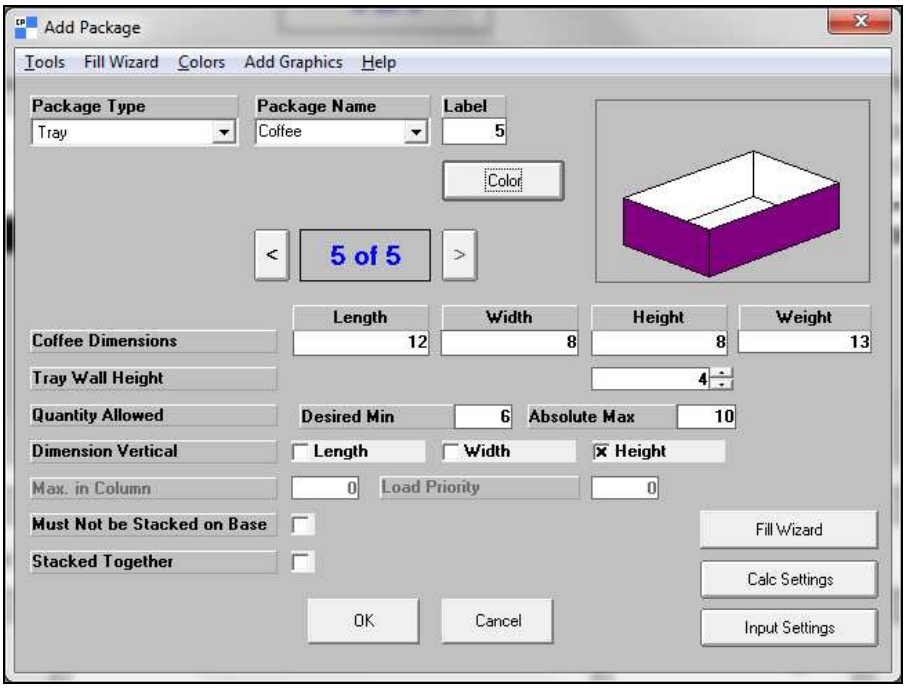
Weight: **13**

Tab to the *Tray Wall Height* field and enter **4** for the height of the wall.

Tab to the *Desired Min* field. Enter **6** for the *Min* and **10** for the *Max* quantities.

Mark only **Height** vertical to the pallet.

Select a color different from the other packages. Your screen should look like this.



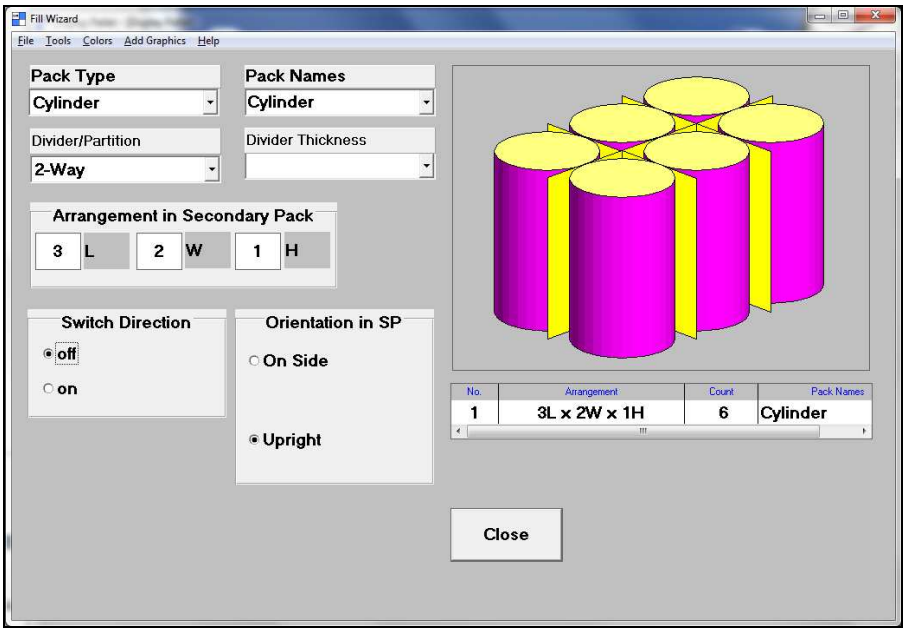
Click on the **Fill Wizard** button so we can enter our product arrangement.

From the *Pack Type* list, select the **cylinder** shape.

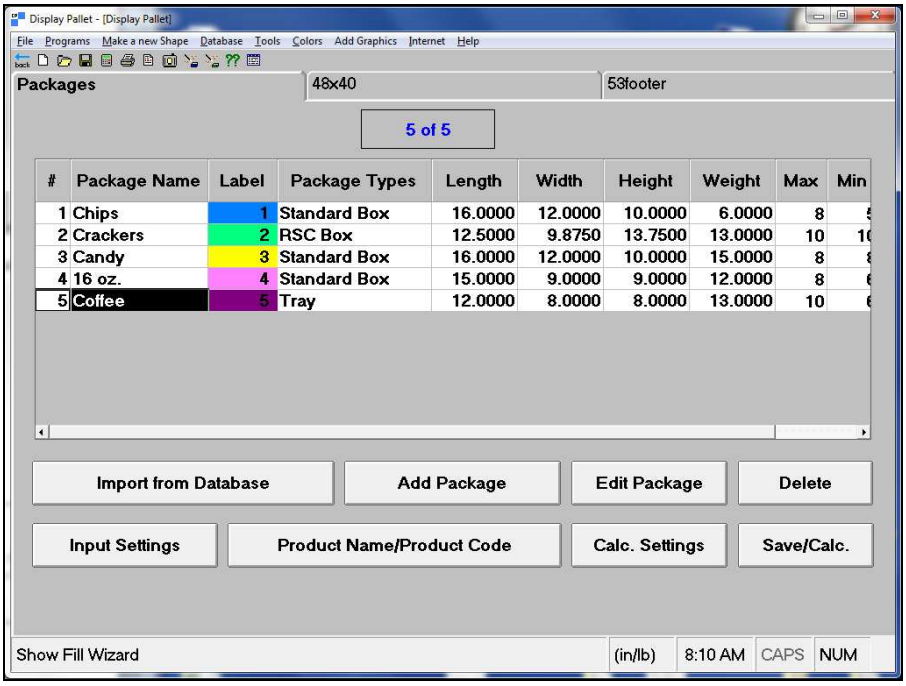
Enter **3 lb.** for your *Pack Name*, and then tab to the *Arrangement in Secondary Pack* section.

Select a **2-way** *Divider/Partition* type and enter **.1** for the material thickness.

Enter **3** in the length (L), **2** in the width (W) and **1** in the height (H) fields.



Click on **Close** to close the **Fill Wizard** and then **OK** to return to the **Packages** tab. Your **Packages** tab should now look like the following.



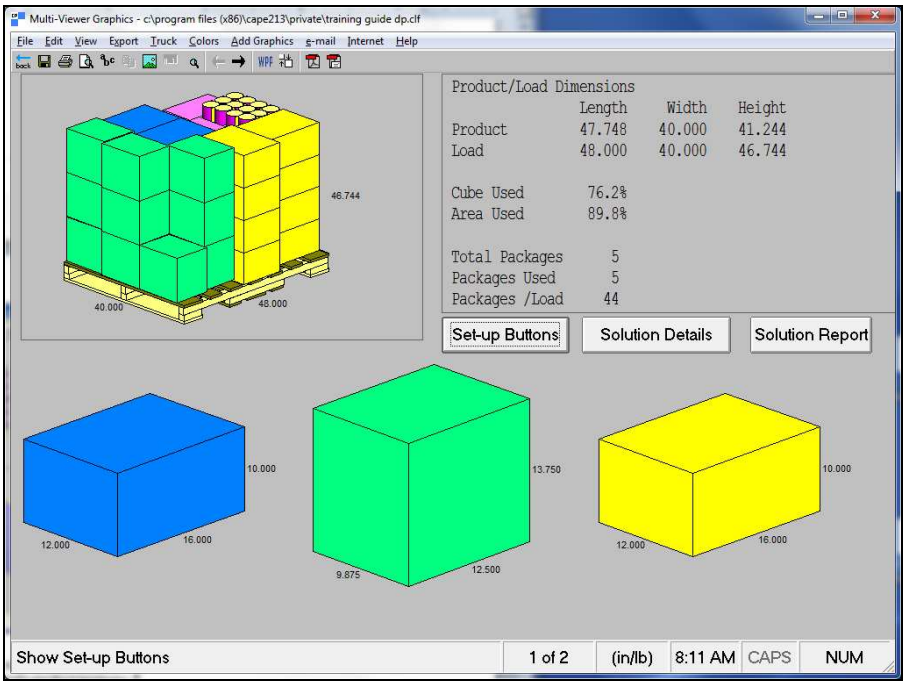
Pallet and Truck Information

Most of the pallet and truck tabs are the same as in the normal Pallet Group. Leave this information as it defaults.

Saving Data

Click on the **Save/Calc**. button or choose **Save Input Data and Calculate** from the **File** menu.

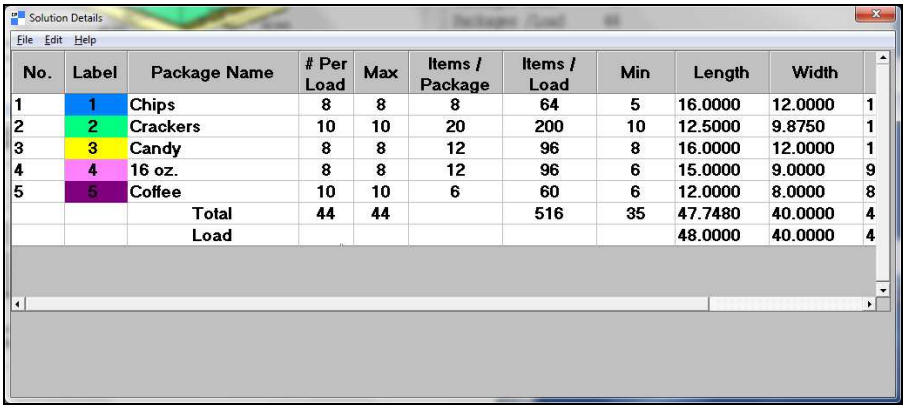
Make sure you have a file name entered and then click on **Save**. The program automatically begins calculating solutions and assembling the diagrams for your problem. When the calculations are finished you will see a new window, Multi-Viewer Graphics, showing solution number 1.



The program has calculated a variety of solutions. It now displays the graphics for the first solution in the list. You have many of the same options in Display Pallet as you do in the single product programs.

Evaluating Results

You will be shown the corner view of the pallet, along with the side views and 2 top views. You can easily review the numbers in the upper right-hand corner. The Load Cubic Efficiency is shown as 62.2%, and the number of packages per load is 44. You can click on the **Solution Details** button to see the list of the items in the load.

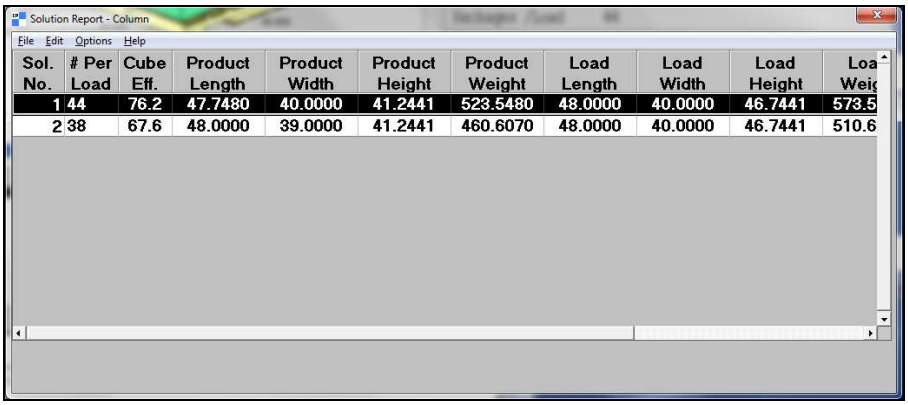


No.	Label	Package Name	# Per Load	Max	Items / Package	Items / Load	Min	Length	Width	
1	1	Chips	8	8	8	64	5	16.0000	12.0000	1
2	2	Crackers	10	10	20	200	10	12.5000	9.8750	1
3	3	Candy	8	8	12	96	8	16.0000	12.0000	1
4	4	16 oz.	8	8	12	96	6	15.0000	9.0000	9
5	5	Coffee	10	10	6	60	6	12.0000	8.0000	8
		Total	44	44		516	35	47.7480	40.0000	4
		Load						48.0000	40.0000	4

Here you can see that the maximum number of boxes for this load was 44, and this load contains 44. If you want to review other solutions to see if there is a better load, you do this through the **Solution Report**.

Comparing Statistics

Click on the **Solution Report** button.



Sol. No.	# Per Load	Cube Eff.	Product Length	Product Width	Product Height	Product Weight	Load Length	Load Width	Load Height	Loa Weig
1	44	76.2	47.7480	40.0000	41.2441	523.5480	48.0000	40.0000	46.7441	573.5
2	38	67.6	48.0000	39.0000	41.2441	460.6070	48.0000	40.0000	46.7441	510.6

The solutions are listed in descending order of cubic efficiency. You will notice that all the solutions have the 44 packages we needed on the load. Double click on any one of these solutions to review the graphics.

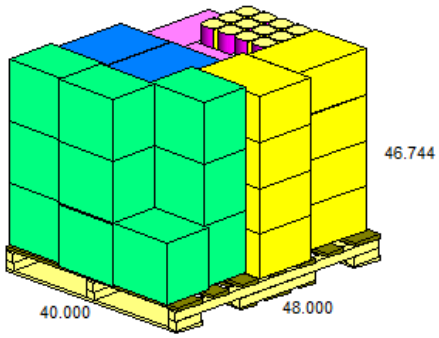
Here is an example of the Display Pallet report.

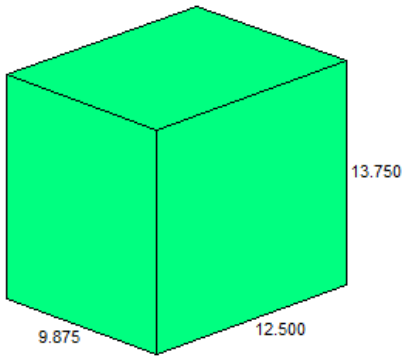
Friday, July 26, 2013

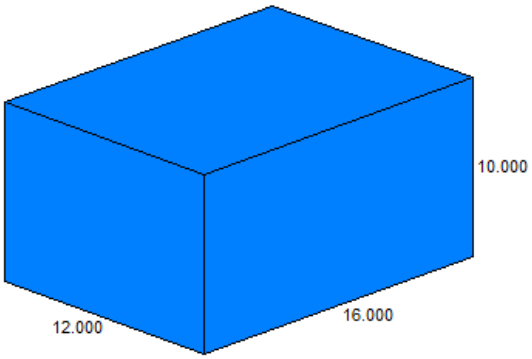
Product Name	Supermarket Order
Product Code	2013-0001
Datafile Name	training guide dp(7/26/2013)
Load Ref.	
Cube Used	76.2 %
Area Used	89.8 %
Pallet type	48X40

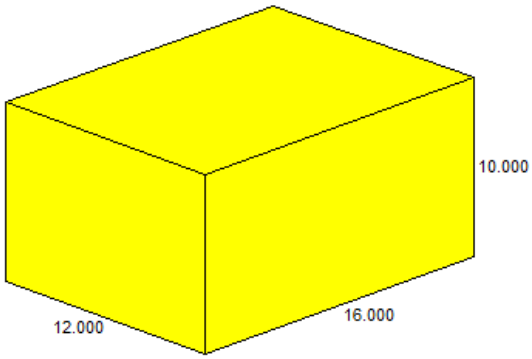
44 Packages / Load

	Length	Width	Height	Net	Gross	Volume
Product	47.748	40.000	41.244 in	-	524.000 lb	45.59 cuft
Load	48.000	40.000	46.744 in	524.000	574.000 lb	51.94 cuft









Package(s) Listing

No.	Name	#/ Load	Max	Min	Packages Packs	Packages Load	Length	Width	Height	Weight
1	Chips	8	8	5	8	64	16.000	12.000	10.000	6.000
2	Crackers	10	10	10	20	200	12.500	9.875	13.750	13.000
3	Candy	8	8	8	12	96	16.000	12.000	10.000	15.000
4	16 oz.	8	8	6	12	96	15.000	9.000	9.000	12.000
5	Coffee	10	10	6	6	60	12.000	8.000	8.000	13.000
	Total #/Load	44				516				

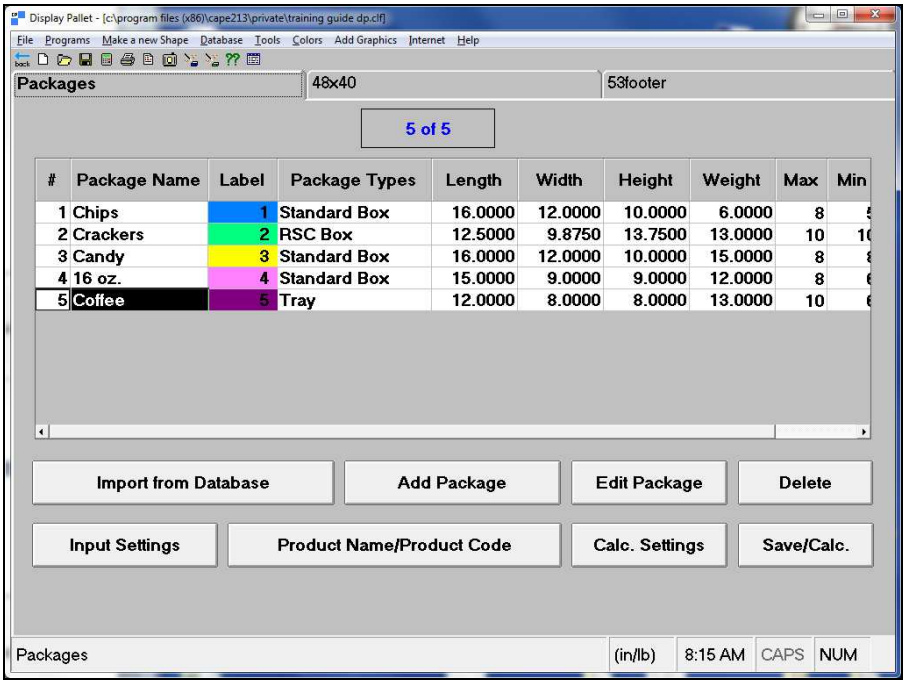
Description Listing

No.	Name	Description	Label	Box Type	#/Load
1	Chips		1	Standard Box	8
2	Crackers		2	RSC Box	10
3	Candy		3	Standard Box	8
4	16 oz.		4	Standard Box	8
5	Coffee		5	Standard Tray	10
				Total #/Load	44

Order Fulfillment Loads

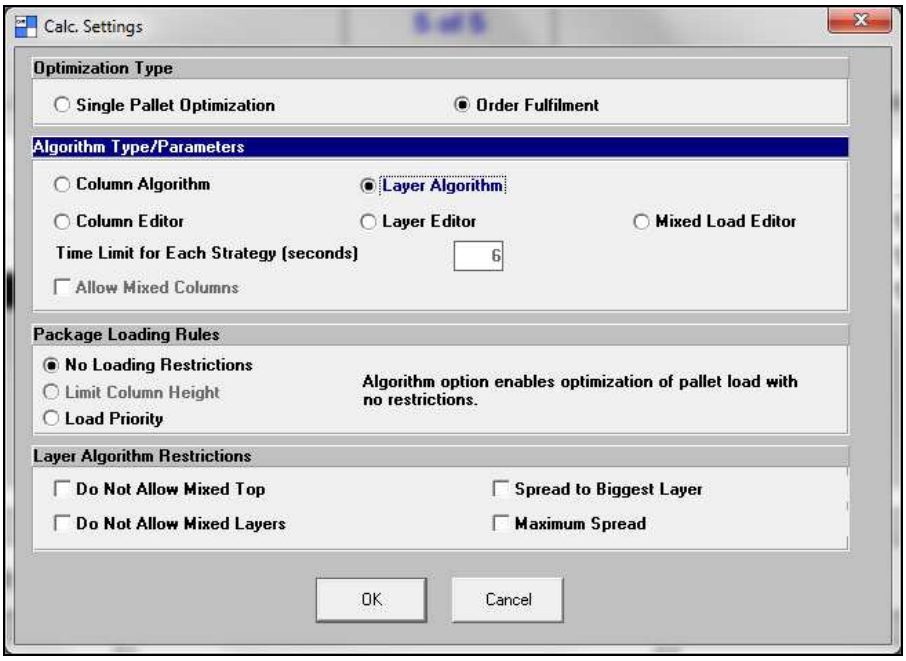
Let's use the same data to evaluate an Order Fulfillment load. This type of analysis, you need to see how many pallets would be required to fill a full order of products and how each of those loads would be arranged.

Click on your **Back** button to return to data entry.



Next click on the **Calc Settings** button.

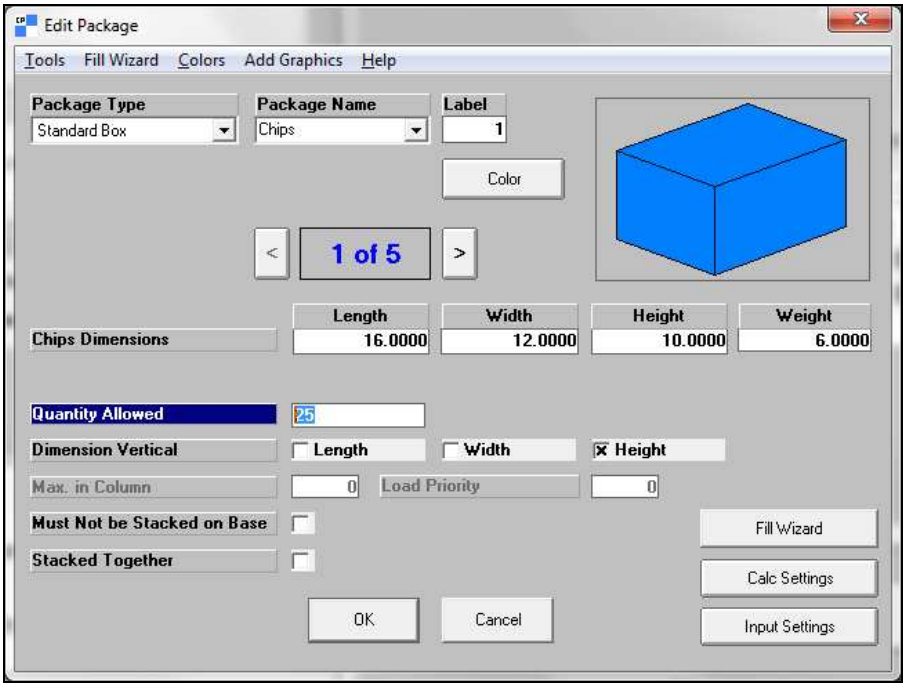
Change your Optimization Type to **Order Fulfillment** and your Algorithm to the **Layer Algorithm**. Your screen should look like this.



Click **OK**.

We will need to change some quantities to represent a large load of these products. Double click on your first package in your list.

You will see that the quantity fields have changed. Enter **25** in the quantity field for your first product.



Now to to package 2 through 5 and change the quantities as indicated below.

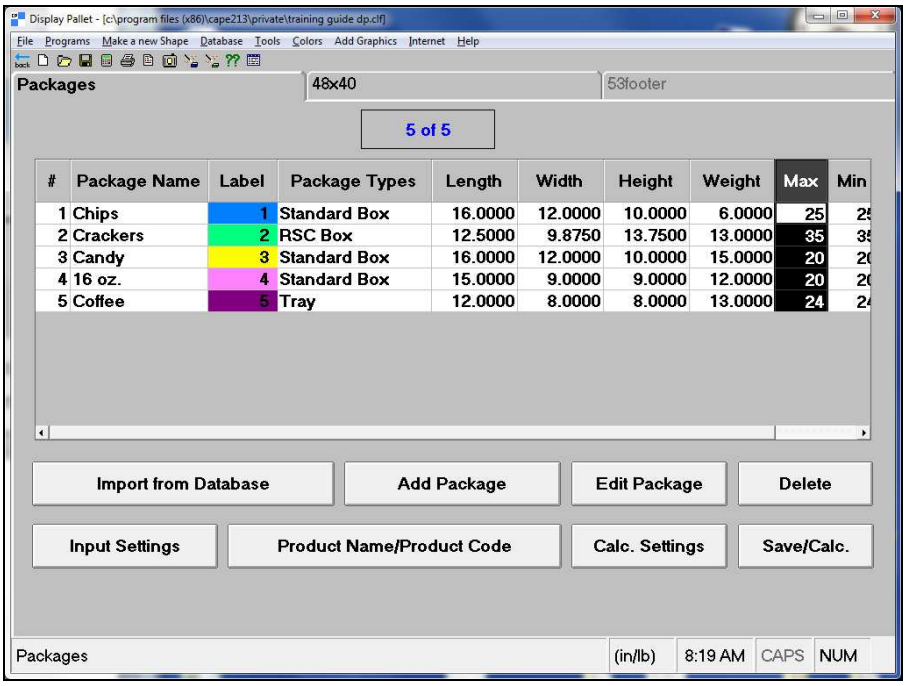
2 = 35

3 = 20

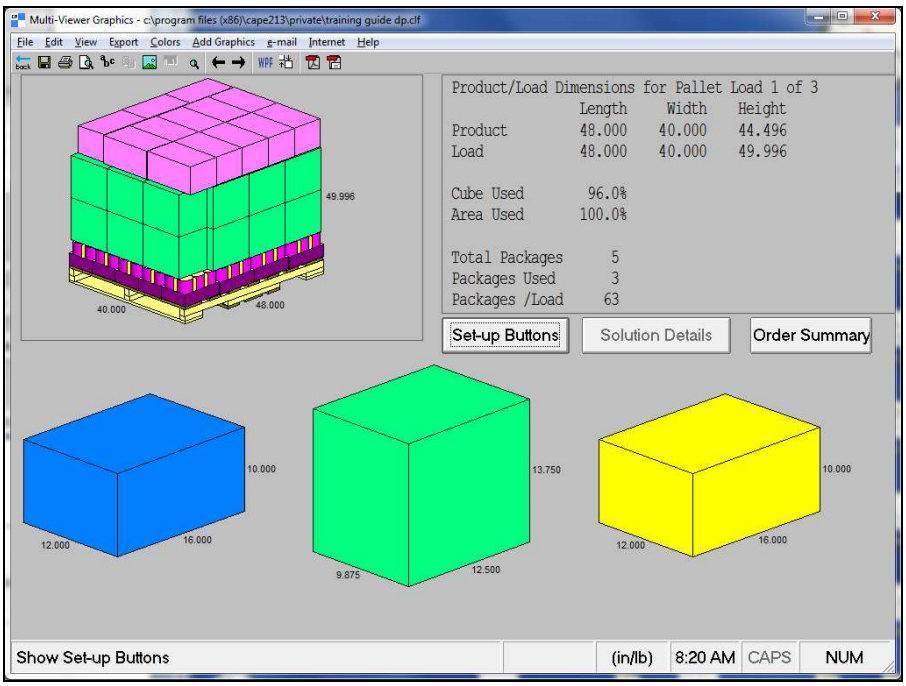
4 = 20

5 = 24

Click **OK**.



Now save and calculate your load and you will see the MultiViewer Graphics screen.



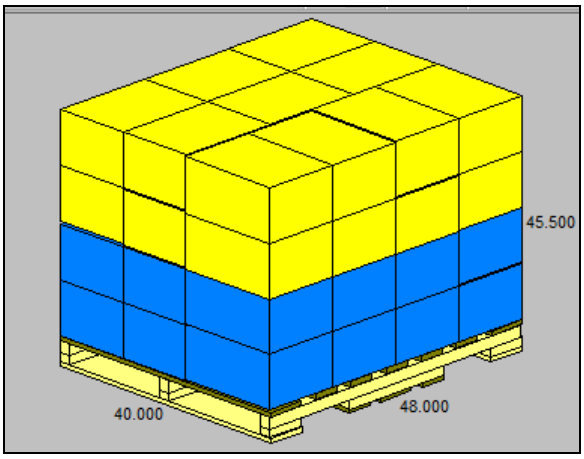
You will notice that this is Pallet Load 1 of 3 as indicated on the quick report.

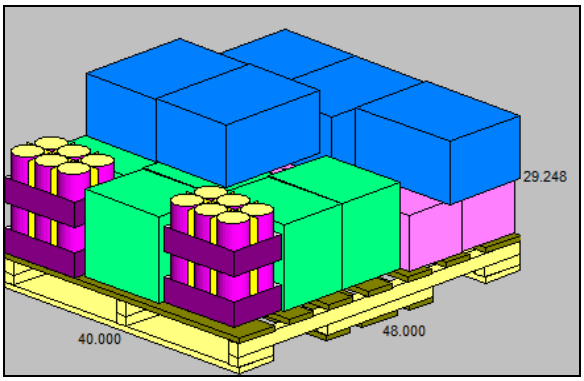
```
Product/Load Dimensions for Pallet Load 1 of 3
                 Length     Width    Height
Product          48.000    40.000    44.496
Load             48.000    40.000    49.996

Cube Used         96.0%
Area Used        100.0%

Total Packages       5
Packages Used        3
Packages /Load      63
```

Here are the other two loads.





Our total order was 124 packages. The first load included 63 packages, the second load was 40 and the last load the final was 21 to fill the load.

Conclusion

Multi-Viewer Graphics for Display Pallet has many of the same options as the normal groups. Experiment with loading trucks, changing diagrams and sharing your data.