



**DOCK  
SEAL/SHELTER  
JUSTIFIER**

**ENERGY LOSS ANALYSIS  
For Loading Dock Doors**

**Prepared For:**

**Powered by**

**CHALFANT**  
**DOCK EQUIPMENT**



**DOCK SEAL &  
SHELTER  
JUSTIFIER**

**ENERGY LOSS ANALYSIS  
For Loading Dock Doors  
-Chalfant Dock Equipment.  
Page 1**

# **JUST 7 EASY STEPS FOR ANALYSIS**

Please complete the following form in the order as given for the form to properly work.

## **STEP 1.**

Door Size \_\_\_\_\_ width x \_\_\_\_\_ height (round up in 6" increments - note: 6" is entered as 0.5).

## **STEP 2.**

Average wind speed \_\_\_\_\_ miles per hour.

## **STEP 3.**

Hours per day door is used \_\_\_\_\_ | Days per week used \_\_\_\_\_ | Weeks of operation per year \_\_\_\_\_ .

## **STEP 4.**

Temperature Differential: \_\_\_\_\_ Average inside Temp. \_\_\_\_\_ Average outside Temp. \_\_\_\_\_  
(If unsure, consult National Weather Service - <http://www.weather.gov/> and check for your location.)

## **STEP 5.**

Type of energy used to heat or cool as well as cost of energy per unit, please only select one form of energy.

Natural Gas \_\_\_\_\_ ccf |  Electricity \_\_\_\_\_ KWH |  Heating Oil \_\_\_\_\_ gallon

## **STEP 6.**

Cost of Dock Enclosure per unit installed \_\_\_\_\_ .

## **STEP 7.**

Easy just check here after completion of above.

You can save the completed form with Adobe Reader 11 or higher, or simply print and reuse form for other door sizes.

**Payback in \_\_\_\_\_ years**

### **Not included in above analysis:**

- Reduced employee absenteeism
- Reduced pilferage of products, materials, etc...
- Reduced product/packaging damage due to weather
- Reduction in dust, bugs, birds and rodents

Powered by: <http://www.ChalfantUSA.com> 11525 Madison Avenue, Cleveland, OH 44102 Phone: 1.800.365.0389



# DOCK SEAL & SHELTER JUSTIFIER

## ENERGY LOSS ANALYSIS For Loading Dock Doors -Chalfant Dock Equipment. Page 2

### Determine the following for each doorway:

Actual Door Size \_\_\_\_\_ w x \_\_\_\_\_ h = \_\_\_\_\_ square feet

Non sealed door size \_\_\_\_\_ (sq. ft.) x 0.20 = \_\_\_\_\_ total - non sealed door square feet

Average wind speed \_\_\_\_\_ miles per hour x 88 = \_\_\_\_\_ feet per minute (FPM)

Total non-sealed door (in sq. ft.) \_\_\_\_\_ x \_\_\_\_\_ FPM = \_\_\_\_\_ cubic feet per minute (CFM)

Temperature Differential \_\_\_\_\_ - \_\_\_\_\_ = \_\_\_\_\_ °F (TD)

(Average indoor temp. - average outdoor temp. - Consult National Weather Service - <http://www.weather.gov/>)

### Determine energy loss:

\_\_\_\_\_ CFM x 1.08 x \_\_\_\_\_ TD = \_\_\_\_\_ BTU's per hour

\_\_\_\_\_ BTU's per hour x \_\_\_\_\_ hours door is open per day = \_\_\_\_\_ daily BTU loss

\*1.08 is a constant based air temperature of 70°F and 0.075 pounds per cubic foot density.

### Convert BTU's to determine cost of energy loss:

Natural Gas \_\_\_\_\_ BTU's per day / 102,500 = \_\_\_\_\_ ccf (ccf per day - energy used)

Electricity \_\_\_\_\_ BTU's per day / 3,412 = \_\_\_\_\_ KWH (KWH per day - energy used)

Heating Oil \_\_\_\_\_ BTU's per day / 138,690 = \_\_\_\_\_ Gallons (Gal. per day - energy used)

\_\_\_\_\_ energy used x \_\_\_\_\_ cost of energy = \$ \_\_\_\_\_ (daily cost per door opening)

### Determine total energy loss:

Cost per day per opening \_\_\_\_\_ x \_\_\_\_\_ Number of days per week x \_\_\_\_\_ Number of weeks of operation = \$ \_\_\_\_\_ Total energy loss for one year.

### Calculate actual yearly savings:

Multiply total energy loss for one year by 0.30. This result is an adjusted yearly savings based on an "average" dock enclosure properly installed on an exterior loading dock door.

Total energy loss \$ \_\_\_\_\_ x 0.30 = \$ \_\_\_\_\_ Adjusted yearly savings.

Now divide individual enclosure cost of unit installed \$ \_\_\_\_\_ by adjusted yearly savings \$ \_\_\_\_\_ =

## Payback in \_\_\_\_\_ years.