

Energy – Pole / Narrow Object Impact

Overview: Computes information for Pole / Narrow Object Impact using Crush/Crash3, Vomhof, Nystrom & Kost, and Wood methodologies.

Entry into Module:

This module of the program is normally entered by clicking on the **REC-TEC** block in the upper left of the **REC-TEC Window** causing the drop-down menu to appear. Place the cursor on the **Energy** block and click on **Pole / Narrow Object Impact** on the sub-menu to initiate this module.

Under certain circumstances, the user may choose to use the **Files** block instead of the drop-down menu approach. Selecting any file with a **.POL** extension in the **Dialog box** accessed from either the **Open Single File** or **Open Multiple Files** block opens this module.

Selecting **AutoLoad [ON]** from either the **Setup Menu** or the **AutoLoad Icon** on the upper right side (third line) of the **REC-TEC Window** automatically loads the two-vehicle scenario that was on the screen when the module was closed, either individually, or when the program was closed. With **AutoLoad [OFF]** on the main **REC-TEC Window**, modules will start without loading a file.

Data Entry:

This module contains the following data entry blocks:

Vehicle

- **Weight (Test)** – Weight of Test Vehicle
- **Weight (Curb)** – Curb Weight of Vehicle
- **Length** – Length of Vehicle
- **Width (FE)** – Width of Vehicle (Front End)
- **f (Post Impact)** – f for Post-Impact Translational Movement
 - Enter Zero to use Alternate Energy
- **Translation (PI)** – Distance of Post Impact Translation (Vehicle)
 - **Alternate: Alternate Energy** – Alternate Post Impact (Linear and Rotational) Energy

Pole – [Checkbox] – Check if Fractured

- **Circumference** – Circumference of Pole
- Or**
- **Alternate Energy** – Alternate Pole Damage Energy
 - **Translation (PI)** – Distance of Post Impact Translation (Pole)
 - **Enter Zero to denote no translation**
 - **Inclination Angle** – Change of Angle resulting from Impact

Vehicle Damage – Crush/Crash3

- **Deformation (Max)** – Maximum Deformation (Vehicle)
- **Spd (No Damage)** – No Damage Speed for Vehicle
- **CG to Front** – Distance from CG to Front of Vehicle (**Crash3**)
- **PDOF** – 0 to +/- 180 Degrees: Front = 0 Rear = 180 Left = - 90 Right = 90 (**Crash3**)
- **Damage Width** – Width of Damage (**Crash3**)
- **Damage Offset** – Measured from CG (**Crash3**)
- **Crush Factor**– Vomhof Only

Surface: (Crush/Crash3)

- Front (Front)**
- Rear (Rear)**
- Right (Right)**
- Left (Left)**

Equidistant ‘C’ Checkbox[] – Check this box for equidistant spaced “C” measurements

- **A – “A” Stiffness coefficient**
- **B – “B” Stiffness coefficient**
- **C(1-6) – “C” measurements (2 minimum)**
- **L(1-6) – “L” measurements – L1 is always Zero (0).**

Output: Crush/Crash3, Vomhof, and Nystrom & Kost or Wood

- **Equivalent Barrier Speed (EBS)**
 - Primary
 - Secondary
- **Average Collision Force**
- **Effective Collision Coefficient**
- **Effective Collision Force**
- **Collision Energy**
- **Break Fracture Energy (Mak)**
or
- **Alternate Pole Damage Energy**
- **Pole-Translation Energy**
- **Post-Impact Translation Energy**
or
- **Alternate Post-Impact Energy**

- **Total Energy**

- **Vehicle Impact Speed**
 - Primary
 - Secondary

Options:

Several **Command Buttons** appear in a frame located at the lower right corner of the module Window. The **Command Buttons** allow the user to engage options including the option to **Open** and **Save** the data required to generate the scenario shown on the screen at the time the file was saved.

- **Open .POL File** – Calls up a **Dialog box**, which **Opens** any pre-existing **.POL** file and displays the output results.
- **Save .POL File** – Calls up a **Dialog box**, which **Saves** data on the screen to files with any user-selectable filenames. This is independent of the automatic saving as “**LastFile.POL**” of the data at the close of this module or the close of the program
- **Range - Monte Carlo** – Calls up the Statistical Range/(Monte Carlo) module transferring the “Displayed” Vehicle Impact Speeds.
- **Help File** – Brings up a paper courtesy of John Daily on Pole and Narrow Object Impacts entitled “*A Method for Vehicle – Wooden Utility Pole Impact Speed Reconstruction.*”
- **N** – This button toggles a graphical number pad on the screen that can be used to enter data into the input boxes without using your keyboard number pad. This may be useful for presentations as data entry can be accomplished using a wired/wireless mouse.