

RAMGUARD™

COLUMN PROTECTION

by Ridg-U-Rak

Patent Pending

Steel Reinforced Rubber Guard



The 12" high RAM Guard snaps onto rolled or structural steel columns 3" wide and up to 3" deep.

Superior Column Protection

RAM Guard™ provides superior rack column protection with its patent-pending Rubber Armored Metal design. Molded of energy absorbing rubber with a "U-shaped" steel insert and force distributing rubber voids, RAM Guard absorbs significantly more energy during impact than most column protection devices offered today.

RAM Guard Advantages

- Protects rack structures from frontal, angled and side impacts
- Significantly lowers impact damage to pallet rack columns
- Requires no hardware or straps to retain the guard on column
- Endures many impacts with no loss of performance
- Significantly outperforms most plastic guards commonly used today

RAM Guard Design

Maximum Impact Resistance by Design

There is a wide range of products designed to help protect pallet rack columns from the everyday abuses that commonly occur in busy warehouse environments. These products include steel reinforced columns, slant-back or offset frames, floor-mounted steel guards, bumpers, barriers and after market attachable guards. Each of these serves a purpose for different applications.

Aftermarket attachable guards have a variety of applications ranging from small plants with high traffic areas to large facilities where it is critical to reduce the time and cost of replacing damaged uprights... and everything in between. There are many types, kinds and sizes of guards on the market today, but none like the RAM Guard.

After nearly two years of development, testing and proto-type designs, the new patent-pending RAM Guard delivers the greatest impact resistance available in aftermarket snap-on or strap-on column guards.

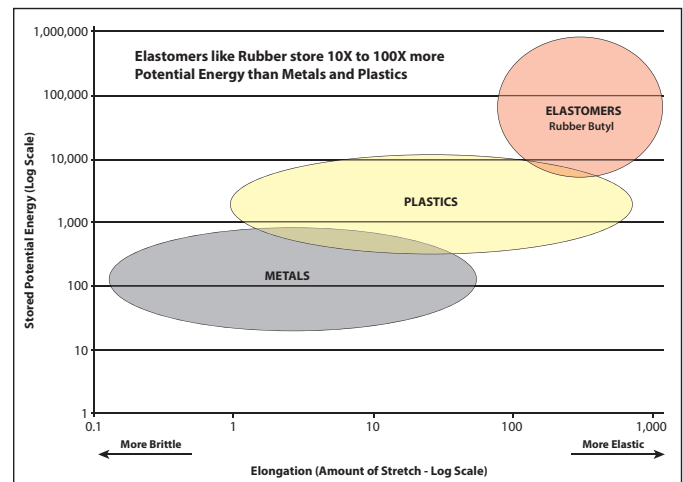
RAM Guard's Design

Through extensive design, testing and evaluation, a specific rubber compound was formulated to provide a balance between durability, density and impact absorption qualities. The chart to the right shows the energy absorbing capacity of various materials that are commonly used in column guards. Clearly, this shows elastomers offer far greater absorbing properties than other common materials.

Once the rubber compound was selected, various steel inserts were tested, culminating in the use of a "U-shaped" steel plate to maximize impact protection from multiple angles. Finally, rubber voids were introduced to assist in the distribution of impact forces. The results speak for themselves!



Why Combine Rubber & Steel?



Elastomers like Rubber absorb much more potential energy per unit mass than most other materials. In fact, between 10 and 100 times more.

- Energy absorbing elastomer guards outperform plastic guards
- Elastomer guards lower the peak acceleration levels at the column
- Elastomer guard with steel reinforcement can endure multiple impacts with no loss of performance



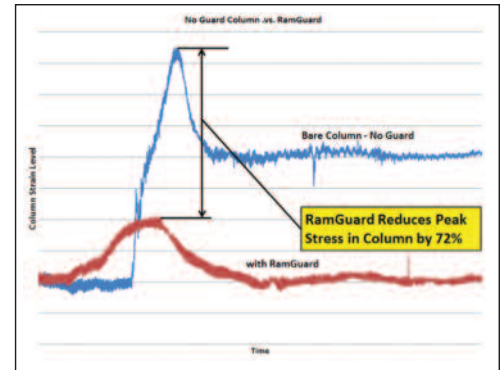
Impact Tests show...

RAM Guard Reduces Peak Stress in a Column by **72%**

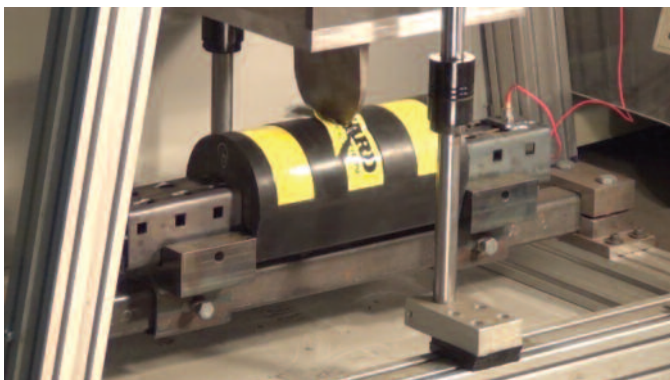
Impact testing to FEM 10.2.02 standards has shown the RAM Guard dissipates more impact energy and better distributes impact forces than other commonly used guards, resulting in no damage to the column or the guard.

In fact, frontal impact data shows the RAM Guard reduces impact stress levels in the column as much as 72%.

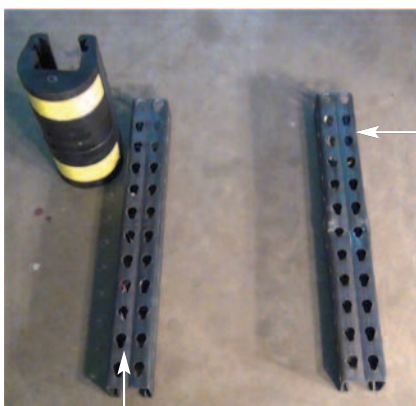
The RAM Guard performs equally well for both frontal and 45 degree impacts. In fact, both the column and RAM Guard were fully functional after 20 impacts!



Frontal Fork Impact Test



45% Angle Fork Impact Test



Unprotected 11 gage column after 6 frontal impacts.

An 11 gage column with the RAM Guard after 20 impacts. **NO DAMAGE TO EITHER COLUMN OR RAM GUARD!**



As shown above, the RAM Guard and 13 gage column were undamaged after 6 impacts. In fact, the same column and RAM Guard were tested an additional 14 times and remained fully functional!



An unprotected 13 gage column after 2 impacts shows significant damage

RAM Guard Specifications

Dimensions

Size: 12" high 5.5" wide

Weight: 9 lbs

Fit

Columns: 3" wide and up to 3" deep

Fits all 3" wide face columns

Standard

Standard: Black

Optional: Added safety yellow stripes



Adapters

Rubber adapters for 3 x 1-5/8" roll-form, 3 x 2-1/4" roll-form and 3" structural columns



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