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Metal Safety Shields

RAMCO[®] uses 24 gauge steel exclusively for its metal safety shields. This gauge, approximately 25 thousandth of an inch thick, is ideal for safety shields. It is sufficiently heavy to withstand [high pressures](#) and also has flexibility to permit shaping.

RAMCO[®] has developed specialized equipment for production of its shields, and use of its manufacturing methods results in high volume production at relatively low cost.

Three metals are used for RAMCO[®] Safety Shields:

- Galvanized steel
- "304" stainless steel
- "316" stainless steel

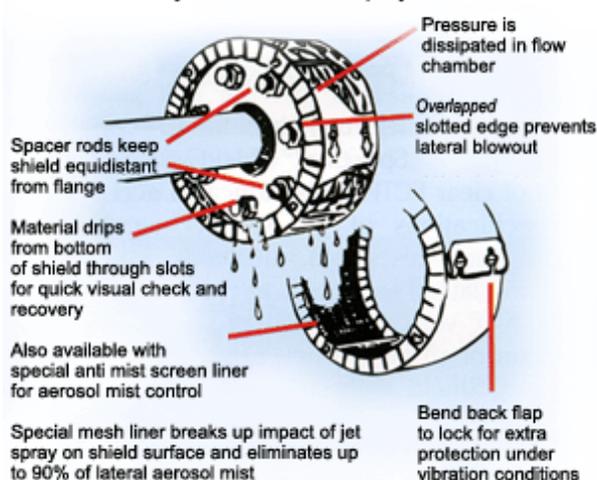


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Galvanized steel is installed widely for water, oil and steam applications. The galvanized material is steel that has been coated with zinc to reduce rusting. It is vulnerable to corrosive attack and should not be used on lines carrying hazardous chemicals. When installed on vessels, it is mandatory that the shield be equipped with a special inner galvanized mesh lining that breaks up the impact of a jet spray on the shield surface, eliminating up to 90% of lateral aerosol mist.

How Metal Safety Shields Control Sprayouts



RAMCO[®] uses stainless steel "304" and "316" alloys specially developed for corrosive applications. Stainless steel "304" contains 18-20% chromium and 8-10.5% nickel and is suitable for applications requiring mild corrosion resistance. In contrast, stainless steel "316" contains 16-18% chromium and 10-14% nickel as well as 2-3% molybdenum. The latter component gives superior resistance to pitting and to most types of corrosion, making "316" suitable for applications involving severe corrosive conditions. These safety shields are also available with inner stainless mesh linings.

Since the heat limit for a thermoplastic shield is approximately 450°F (232° C), the use of stainless steel safety shields is required whenever conditions in the line exceed this [temperature](#). The choice between “304” and “316” depends on which is likely to suffer the least corrosive attack. Stainless steel with a thickness of 24 gauge has a tensile strength of 3000 psi (207 bar), and a melting point of approximately 2650°F (1454°C). Although some pitting may occur due to corrosive fumes, stainless steel safety shields can be expected to provide many years of effective service. They have been approved by the United States Department of Agriculture for installation in food processing plants.

In isolated circumstances, it has been observed that chemicals may be present in the external environment that are incompatible with RAMCO® thermoplastic safety shields. This unfavorable, aggressive climate causes shield damage. With these conditions, installation of stainless steel safety shields is recommended, even though the line temperature may be less than 450°F (232°C).

RAMCO® Metal Safety Shields are suitable for flanges and every type of valve in all size systems carrying steam, solvents, chemicals and corrosive agents. They are appropriate for all high pressure and temperature applications. The shields slip over existing pipe installations and are put in place easily and quickly with the use of a screwdriver.

In the event of a leak, the fluid collects at the bottom of the shield where the overlapping slotted edge prevents a lateral blowout and allows the leaking condition to be highly visible without causing injury to plant personnel and equipment.

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