

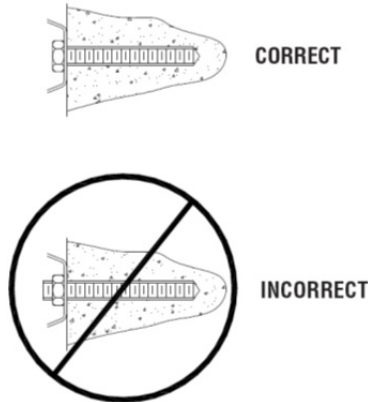
#### 4) Add the Washers and Nuts

Put washer and nut on stud, leaving nut flush with end of stud.

#### 5) Insert Studs into Holes

Push stud through part to be anchored and into hole.

**Note:** In horizontal applications, the stud should be flush with the top of the nut and torqued to 165 N-m [120 ft-lb].



**Figure 69**  
**MP-3® Horizontal Application**

## **MP-3® Assembly Cautions**

### 1) Shelf life

If the shelf life of the MP-3® has expired (see MP-3® kit for expiration information), mix a small amount of MP-3® in the proportions of one part A to two parts B by volume. If the material does not set according to the instructions, contact Trinity Highway for guidance.



**Warning:** Do not use MP-3® if: the material fails to set up, Part A-Resin had gelled (for vertical applications), or TX-Resin is NOT gelled (for horizontal applications).

### 2) Steel rebar

If steel rebar is encountered while drilling an MP-3® anchor bolt hole, apply one of the following solutions:

- A) Using a diamond core drill or rebar drilling tool, drill through the rebar only and then switch back to the concrete bit to drill into the underlying concrete until the proper hole depth is reached.



**Caution:** Do not drill through rebar without first obtaining permission to do so from the local project engineer.

- B) Drill a new hole down at an angle past the rebar to the proper depth. Anchor the stud by completely filling both holes with MP-3®.

# **Maintenance**

## **Frequency**

Inspections are recommended, as needed, based upon volume of traffic and impact history. Visual Drive-By Inspections are recommended at least once a month. Walk-Up Inspections are recommended at least once a year.

## **Visual Drive-By Inspection**

- 1) Encountering a system with the Hit Indicator in the vertical position mandates inspection of the system. A walk-up inspection will be necessary.
- 2) Inspect the system in accordance with the QuadGuard® Elite Maintenance Flow Chart on page 65.



**Caution:** It is important to inspect a system after it has been impacted even if it appears to be self-restored and fully maintained. In particular, check the Fender Panels/Diaphragm attachment bolts to be sure none have failed. Again, only the local highway authority can determine if the system is reusable after impact.

**Note:** Refer to Cylinder placement on pages 63 and 64.

- 3) Be sure the Nose Cover is in place.
- 4) Note the location and condition of the QuadGuard® Elite and the date of visual drive-by inspection.

## **Walk-Up Inspection**



**Caution:** A system that has been impacted can store energy in collapsed Cylinders and may spring back unexpectedly causing possible serious injury (see “Restoring Collapsed Systems” on page 61). Use caution when inspecting, disassembling or restoring systems that are collapsed in any amount.

## **Maintenance Checklist**

- 1) Clear and dispose of any debris on the site.
- 2) Be sure all bolts are tight and rust free.
- 3) Be sure Concrete Anchor Bolts are securely anchored.
- 4) Be sure Diaphragm Legs are straight and chains are taut.
- 5) Be sure all Mushroom Washer Assemblies are properly aligned and positioned (see Figure 71).
- 6) Fender Panels and Transition Panels should nest tightly against the system. For wrong way traffic, the maximum gap allowed is 20 mm [.78”] (see Figure 73).
- 7) Be sure Cylinders are in good condition and are properly positioned on their Support Brackets.
- 8) Inspection of the system is necessary if the Hit Indicator is in the UP position, even if system appears normal.