

Material Standards & Specifications

Specialty Products Company



| | | |
|---------------------|-------------------|-------------------------------------|
| MSS | 4.006 | Elastomer Test Specification |
| Approved by: | JFR | |
| Revision: | B | |
| Date: | 03/30/2020 | Peer review: WCH 4/3/2020 |

Scope:

This specification is intended to cover assemblies with metal parts bonded to elastomers. An elastomer test specification was needed for the various bushing and strut mount components to allow SPC to apply part-specific test requirements. This specification replaces IP-187.

General Requirements:

- All drawing configuration dimensions, notations, additional Purchasing requirements as well as additional Quality certifications and requirements shall apply to these parts.
- Each incoming shipment shall have an elastomer material certification from the supplier. If there is more than one manufacturing lot per shipment then an individual certification is required for each manufacturing lot.
- As appearance is an important function of these parts, any discoloration or corrosion on the metal sleeves or in the bond areas shall be cause for lot rejection.
- The parts must be free of excessive rubber flash.
- Welded components shall be free of weld splatter with a good overall weld appearance.
- Machined and formed parts must be free of burrs and sharp edges.

Testing Requirements:

Type 1: (Destructive Test Requirements for Bushings)

- To ensure a good elastomer to metal bond, test sample quantities per test plan from each bushing lot to axial shear failure. Support the bushing outer sleeve in an appropriate press fixture then push the inner sleeve of the bushing and record the peak force. See figure 1 example.
- Under this destructive testing, the elastomer itself should be the failure point, not the metal-to-primer bond, or the primer-to-elastomer bond. A 25% maximum of the failure zone may be in the sleeve-to-primer or primer-to-elastomer bonds.
- An exception can be made to the 25% requirement if the push out force is within one standard deviation of the historical average of accepted parts for that part number (or greater).

Type 2: (Non-destructive Test Requirements for Bushings)

- This test has been removed from the requirement per revision B.

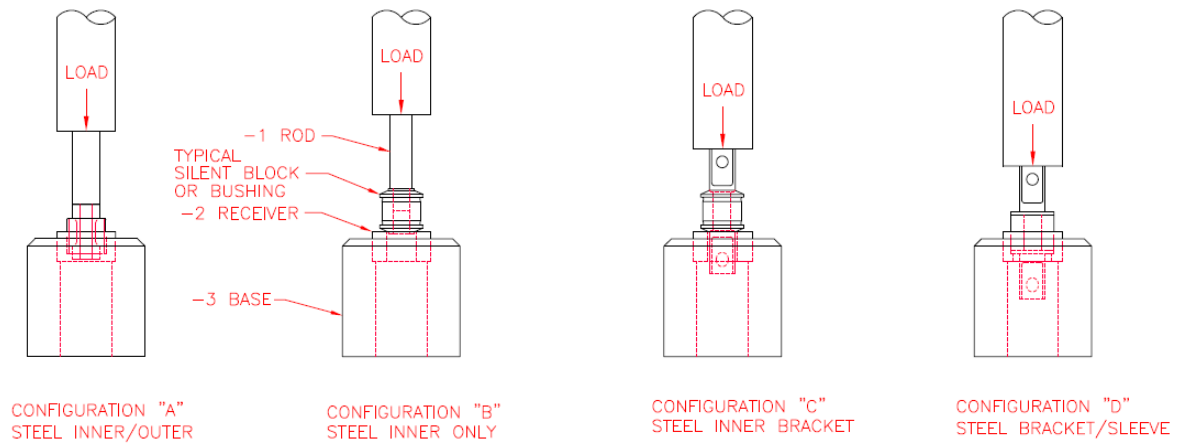


Figure 1: Bushing test setup examples.

Type 3: (Destructive Testing Requirements for Strut Mounts)

- To ensure a good elastomer to metal bond, test sample quantities per test plan from each production lot of strut to axial shear failure. Support the outer perimeter of the mount and press out the center sleeve, see Figure 2 example.
- Under this destructive testing the elastomer itself should be the failure point, not the metal-to-primer bond or the primer-to-elastomer bond. A 25% maximum of the failure zone may be in the metal-to-primer or primer-to-elastomer bonds.
- An exception can be made to the 25% requirement if the push out force is within one standard deviation of the historical average of accepted parts for that part number or greater.

Type 4: (Non-destructive Test Requirements for Strut Mounts)

- This test has been removed from the requirement per revision B.

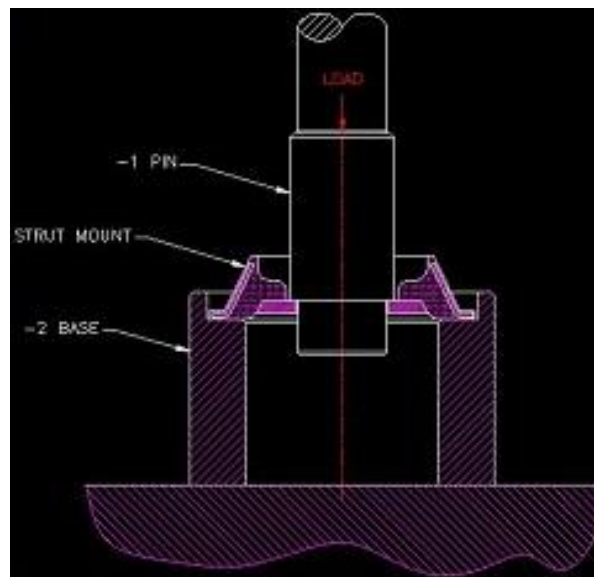


Figure 2: Strut Mount test setup examples.