

Aerospace Operations 40-60 Delaware St. Sidney, NY 13838-1395		MOLDING	Manufacturing Layout Part No.
Quality Approval: HANEY Page 24	Quality Standards		<b>PR302 ISM</b>  Revision 8/09/2012
	In Shell Molding ISM		

### Background:

- This advanced connector manufacturing method utilizes the metal shell component as an integral part of the molding operation. Special features of the shell are used as mold closure sealing members.
- Inserts utilizing dielectric members are loaded into the mold, followed by the metal shell.
- Fluorinated silicone rubber is then injected into the shell forming the wire sealing grommet and the face seal in the pin style.
- The insert is retained and sealed inside the shell by the fluorinated silicone rubber. The rubber replaces the staking ring.
- The molded features are specifically designed to preclude entrance of rubber material into contact cavities.
- Special primers and treatments assure a high level of adhesion of the rubber compound.

### Acceptable Visual Differences:

- The Integrally Molded manufacturing method appearance differs from the previous manufacturing method as follows:
  1. At the wire sealing grommet, accessory end of the connector, a small column of the fluorinated silicone rubber will be located on the rear surface near the top of the insert pattern. This is the point of rubber injection (See Figure 1). This is cosmetic and has no effect on the connector form, fit, or function.
  2. The diameter between the fluorinated silicone rubber grommet and the metal shell inside diameter will not have a clear RTV backfill (See Figure 2). A separate backfill operation is not required for this “integral molded” design.
  3. The diameter at the mating end of a plug with socket contacts will have a ring of fluorinated silicone rubber around the insert periphery. This is cosmetic and has no effect on the connector form, fit, or function.  
(See Figures 3 and 6 for Acceptable)
  4. Loose flash or free ‘floating’ pieces of molding material or other FOD is Not allowed. (See Figures 4, 5, 9, 10, 11, 12).

(Continued)

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5. INTERFACIAL SEALS

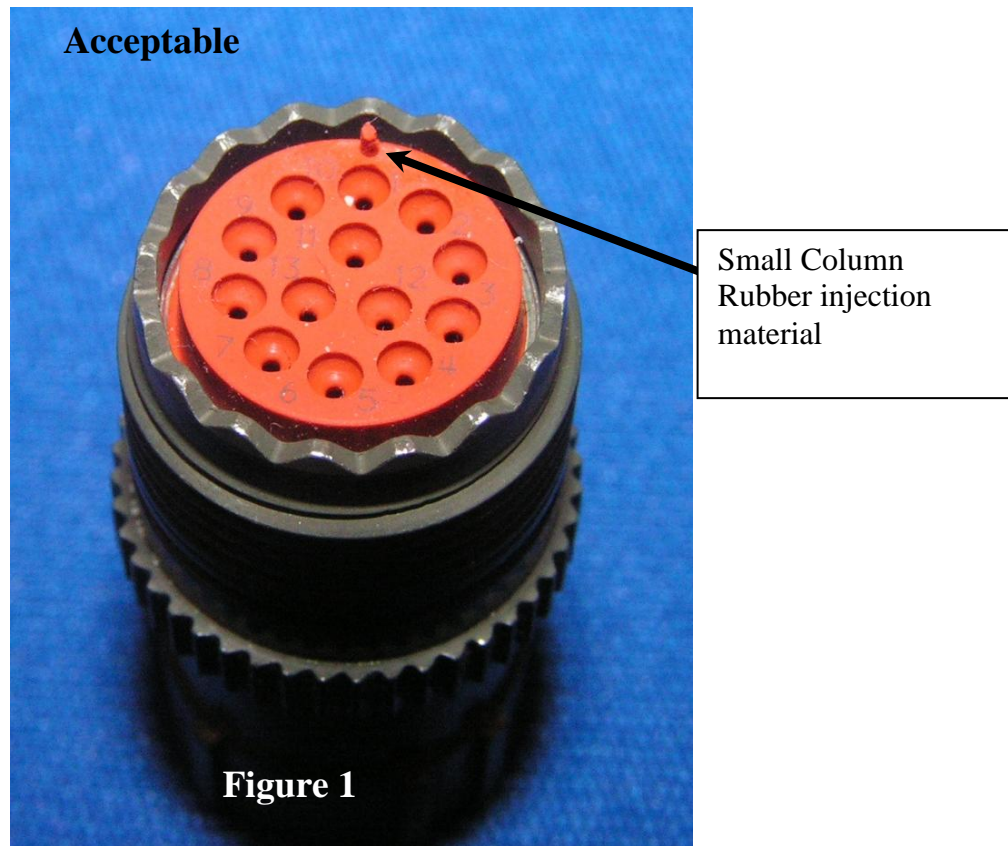
**UNACCEPTABLE FLASH** is shown on **Figures 9,10,11,12.**

Thin and loosely attached flash which may break off is not permissible.

Solidly attached flash on outside of towers is ACCEPTABLE, (Figure 7 and 8), IF it does not and can not invade the contact hole.

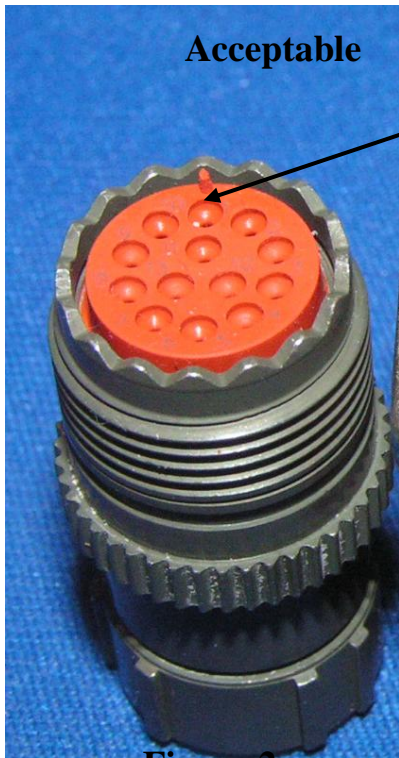
\*\*\*\*\*

**Photos of various conditions. (Acceptable and Unacceptable are shown).**



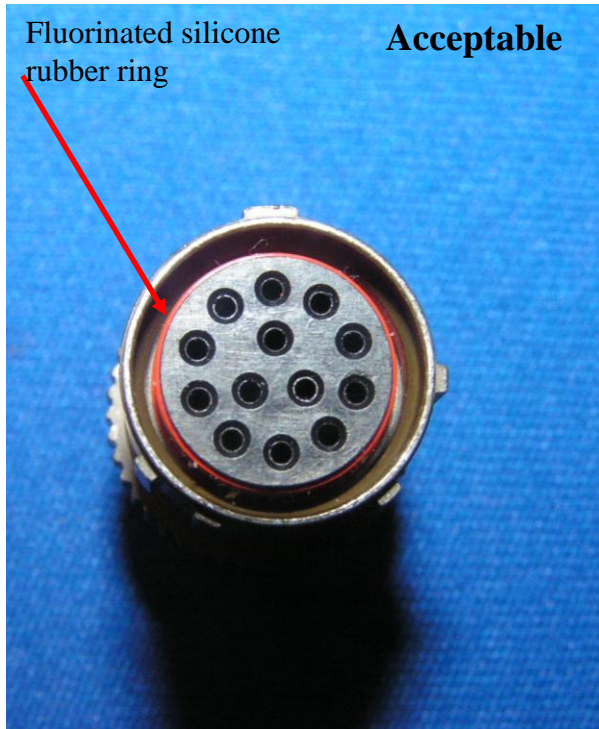
See Page 24H for further details pertaining to the rubber column.

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**Figure 2**

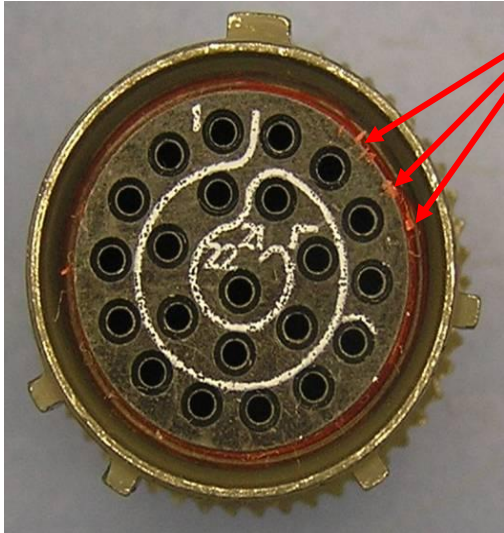
Molded rubber seal



**Figure 3**

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Figure 4

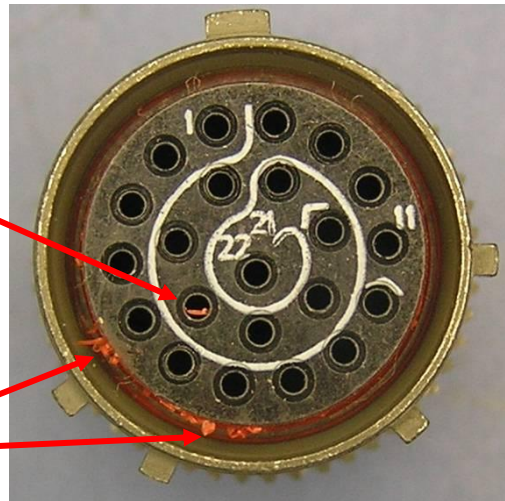


Loose matter / flash  
from Molding.

**Reject**

Figure 5

Loose  
matter from  
Molding.



Loose Flash

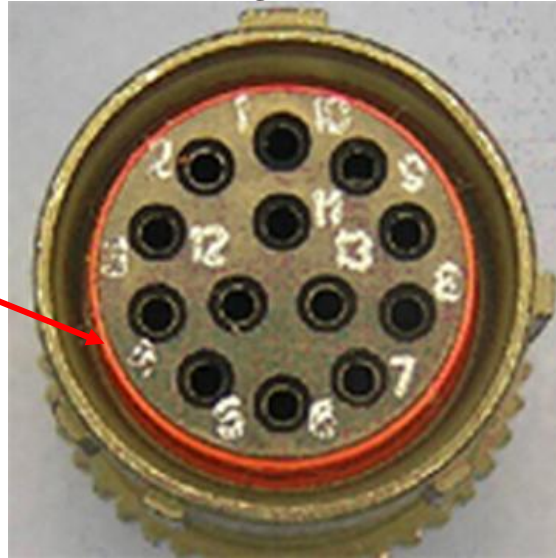
**Reject**



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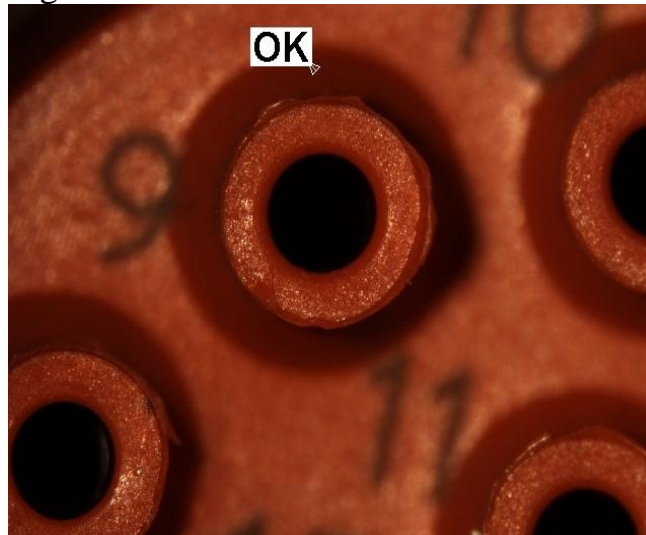
**Figure 6**

Ring of Molding material around insert exhibits no flash or loose matter.



**Acceptable**

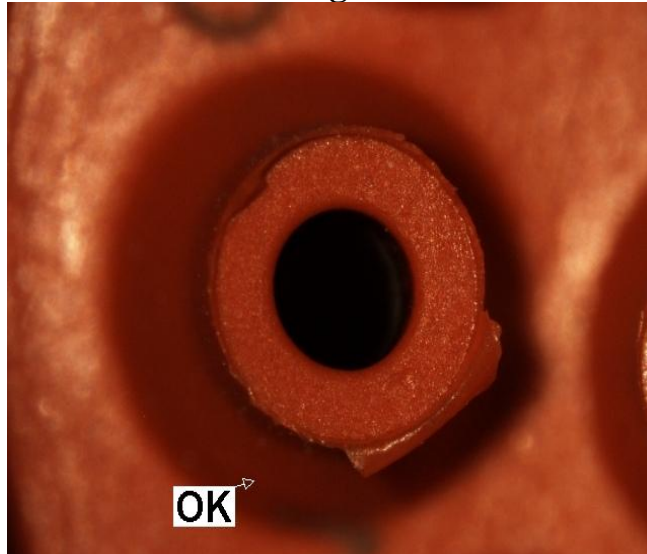
Figure 7



**Acceptable**

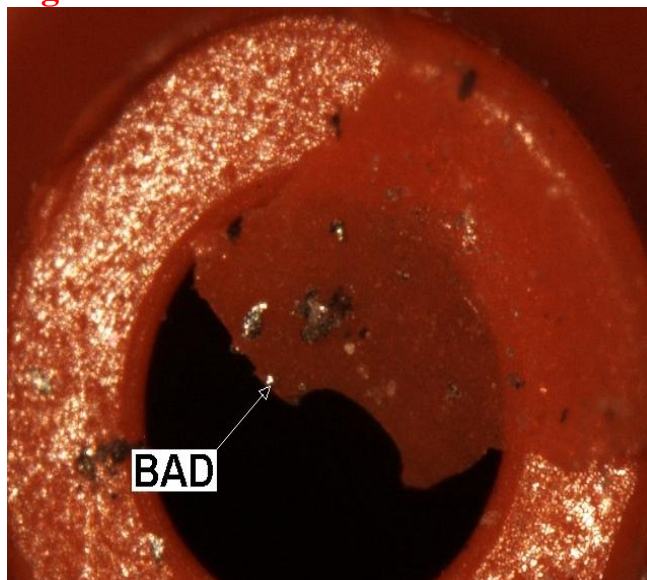
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**Figure 8**



**ACCEPTABLE**

**Figure 9**



**REJECT**

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**Figure 10**



**REJECT**

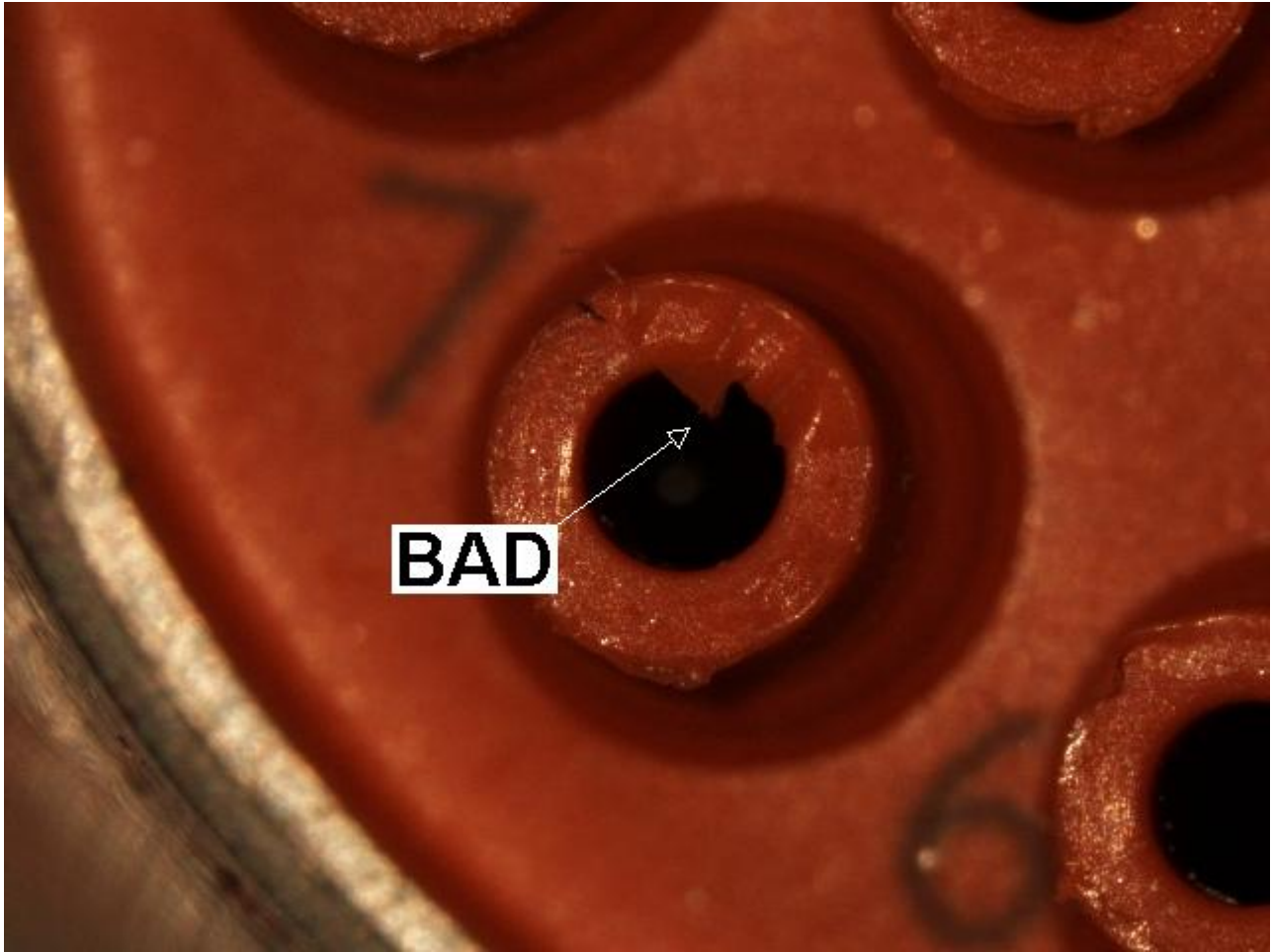
**FIGURE 11**



**REJECT**

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**FIGURE 12**

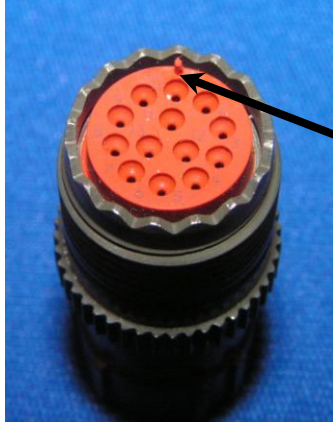


**REJECT**



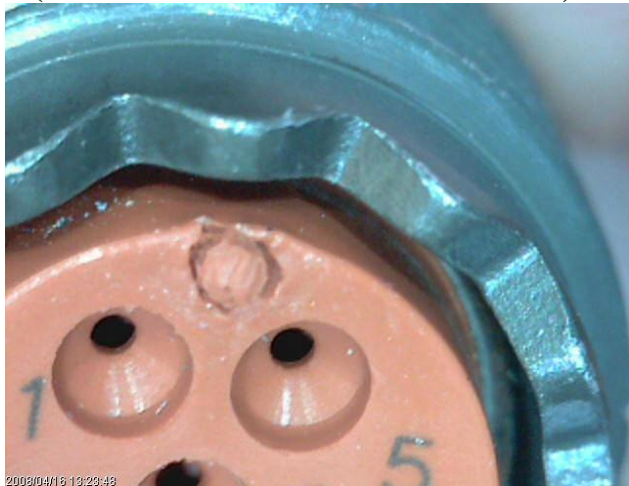
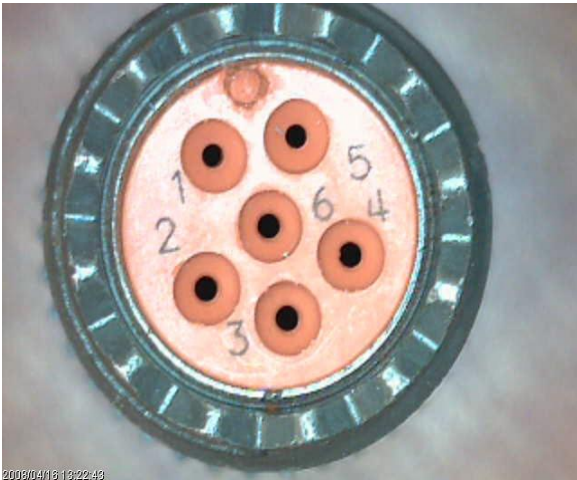
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The small column of rubber injection material may not always appear 'perfect' as shown to the right. The 2 photos below show acceptable product, the 'column' does not modify the outside diameter of the grommet. The bottom 2 photos show Unacceptable product, as the column does modify the diameter of the grommet.

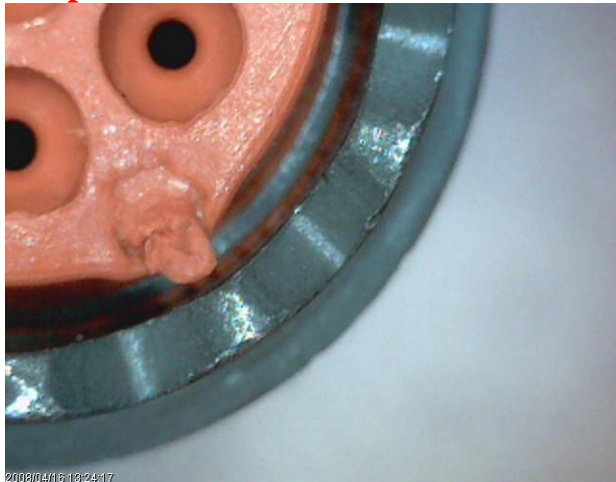
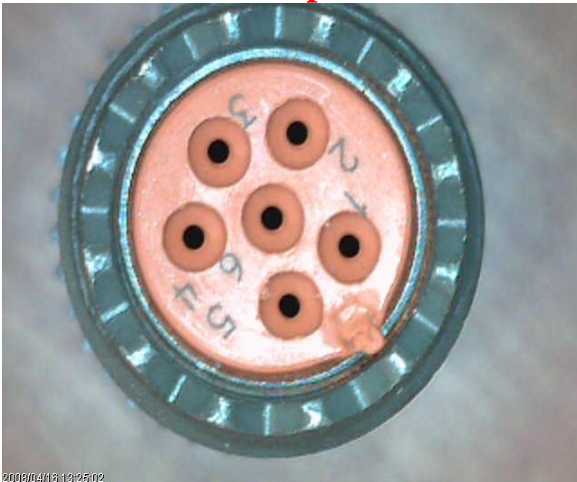


Small Column  
Rubber injection  
material

**Acceptable rubber columns ( above and two immediate below)**



**Two photos below show unacceptable rubber columns**



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It is normal for the Chromate to be removed due to closing the mold against this surface.  
The actual Cadmium plate underneath is still present.  
This condition is ACCEPTABLE.

