



Leak Test on Press Nuts

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. Testing the leak-tightness of joints with press nuts.

1.2 Applicability. For all press nuts.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW2

2.3 Additional References.

Merck Item Number 108641, water detection paste N.

3 Resources

3.1 Facilities. Sleeves or pipe sections which can be positioned on the tested components in such a way that a water column of defined height is generated at the seal area to be tested.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Aids to detect the presence of water (e.g., Merck water detection paste N, item number 108641).

3.2.2 Absorbent paper which shows a clear change after contact with water (indicator paper). Proprietary disposable paper towels, for example, are suitable as they remain wrinkled and sometimes show changes in color, even after they have dried out.

3.3 Test Vehicle/Test Piece. Depending on the condition of the component, the test can be performed either on the finished part or on specially prepared test parts (test part installed on test plates).

If not otherwise specified in the test request documentation, an uncoated test panel made from sheet steel to GMW2-M-ST-S CR 3 shall be used. Thickness will vary depending on the press nut selected.

3.4 Test Time.

Calendar time: 1 day

Test time: 1 h to 3 h

Coordination time: 2 h

3.5 Test Required Information. The actual stress that the component is exposed to in its installation location shall be known and a corresponding guideline regarding water column height difference shall be defined.

3.6 Personnel/Skills. Qualified personnel in Production and Quality Assurance.

4 Procedure

4.1 Preparation.

4.1.1 If required, the threaded hole shall be sealed off either by screwing a screw into the press nut, by counter holding with a suitable device (rubber coated plate or similar), or by other suitable measures.

4.1.2 Prior to the test, the test parts shall be stored for at least 4 h at $+23\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$.

4.2 Conditions.

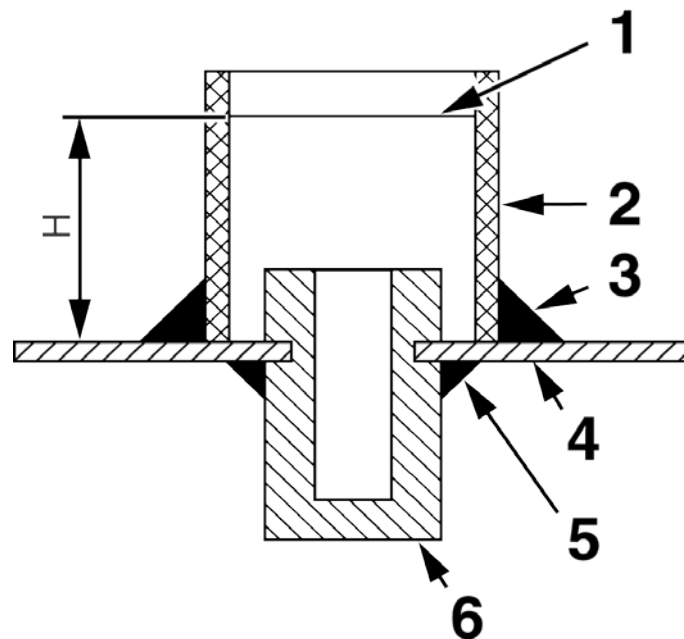
4.2.1 Environmental Conditions. The test shall be performed at a temperature of $+23\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions.

4.3.1 The threaded hole (if present) is sealed off, as described in 4.1.1. The sleeve is placed in position and sealed off. The water detection substance is applied to the underside of the test part.

4.3.2 The test part is positioned on an auxiliary device in such a way that the water column stands vertically on the upper side of the test part and that $H \approx 50\text{ mm}$ to 150 mm tall gap remains underneath. Indicator paper is placed under the test part (see Figure 1). Tightness classification is specified in Table 1.



- 1 Fluid level
- 2 Sleeve
- 3 Sealing compound
- 4 Panel
- 5 Water detection paste
- 6 Test part

Note: Figure 1 shows the test part with threaded hole sealed off.

Figure 1: Test Setup