

**ROOF SPECIALTIES  
HYDROSTATIC TEST  
RESULTS FOR THALER  
RETROFIT ROOF DRAIN  
WITH SUPER-SEAL  
RING GASKET**

**INTRODUCTION**

A number of mocked-up roof drain assemblies equipped with the Thaler Super-Seal EPDM sealing ring gasket were tested to establish at what pressure water bypassed the installed Super-Seal ring. Each of the mock-up samples consisted of:

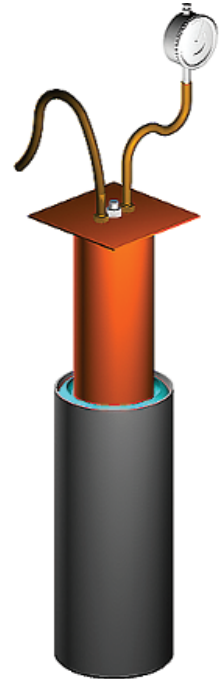
- a 12" (305 mm) long steel "drain pipe leader" with a flat plate welded onto the bottom of the pipe.
- a 9" (229 mm) long copper "drain outlet pipe" with the top capped with a copper plate equipped with two nipples soldered to the plate (one nipple for introducing air pressure and the other nipple to monitor the supplied pressure). The bottom of the "outlet" was fitted with the Thaler Super-Seal EPDM sealing ring.

**PROCEDURE**

Each "leader" was filled with water to a level 1/2" (12 mm) below the top edge of the "leader".

The copper "drain outlet" with silicone lubricated Super-Seal ring was then inserted into the steel "leader" and secured using a threaded rod attached to the top and bottom plates to prevent the two components from separating during testing.

Air pressure was applied using a regulated electric air pump or regulated shop service, as required. Pressure was monitored using a calibrated 0" to 200" H<sub>2</sub>O Merical digital manometer or calibrated Matheson 0 to 30 psi gauge, as required. Air pressure was slowly introduced into each assembly until visible water leakage was noted around the Super-Seal EPDM sealing ring. The pressure at which leakage was observed was then noted. The results are shown in the chart below.



**HYDROSTATIC TEST RESULTS\***

Nominal Size Steel Drain Pipe Leader	Steel "Drain Pipe Leader" I.D.	Copper "Drain Outlet" Pipe O.D.	** Maximum Applied Pressure at Which Leakage Occurred		
2" (51 mm)	1.97" (50 mm) Sched 80	1.37" (34.8 mm)	2.67 psi (18.40 kPa)	74" H <sub>2</sub> O (1880 mm)	384 psf (18.40 kPa)
	2.06" (52.3 mm) Sched 40		1.55 psi (10.69 kPa)	43" H <sub>2</sub> O (1093 mm)	223 psf (10.63 kPa)
3" (76 mm)	2.92" (74.2 mm) Sched 80	2.35" (59.7 mm)	3.28 psi (22.61 kPa)	91" H <sub>2</sub> O (2311 mm)	472 psf (22.6 kPa)
	3.070" (78 mm) Sched 40		2.78 psi (19.17 kPa)	77" H <sub>2</sub> O (1956 mm)	400 psf (19.15 kPa)
4" (102 mm)	3.84" (97.5 mm) Sched 80	3.32" (84.3 mm)	2.75 psi (18.96 kPa)	76.1" H <sub>2</sub> O (1933 mm)	396 psf (18.96 kPa)
	4.04" (102.6 mm) Sched 40		1.10 psi (7.58 kPa)	30.5" H <sub>2</sub> O (775 mm)	158 psf (7.57 kPa)
5" (127 mm)	4.875" (124 mm) Sched 80	4.34" (110 mm)	30 psi (206.84 kPa)	830" H <sub>2</sub> O (21 082 mm)	4320 psf (206.84 kPa)
	5.084" (129 mm) Sched 40		1.84 psi (12.68 kPa)	51" H <sub>2</sub> O (1295 mm)	265 psf (12.69 kPa)
6" (152 mm)	5.743" (146 mm) Sched 80	5.258" (134 mm)	20 psi (137.89 kPa)	553" H <sub>2</sub> O (14 046 mm)	2880 psf (137.89 kPa)
	6.050" (154 mm) Sched 40		1.37 psi (9.44 kPa)	38" H <sub>2</sub> O (965 mm)	197psf (9.44 kPa)

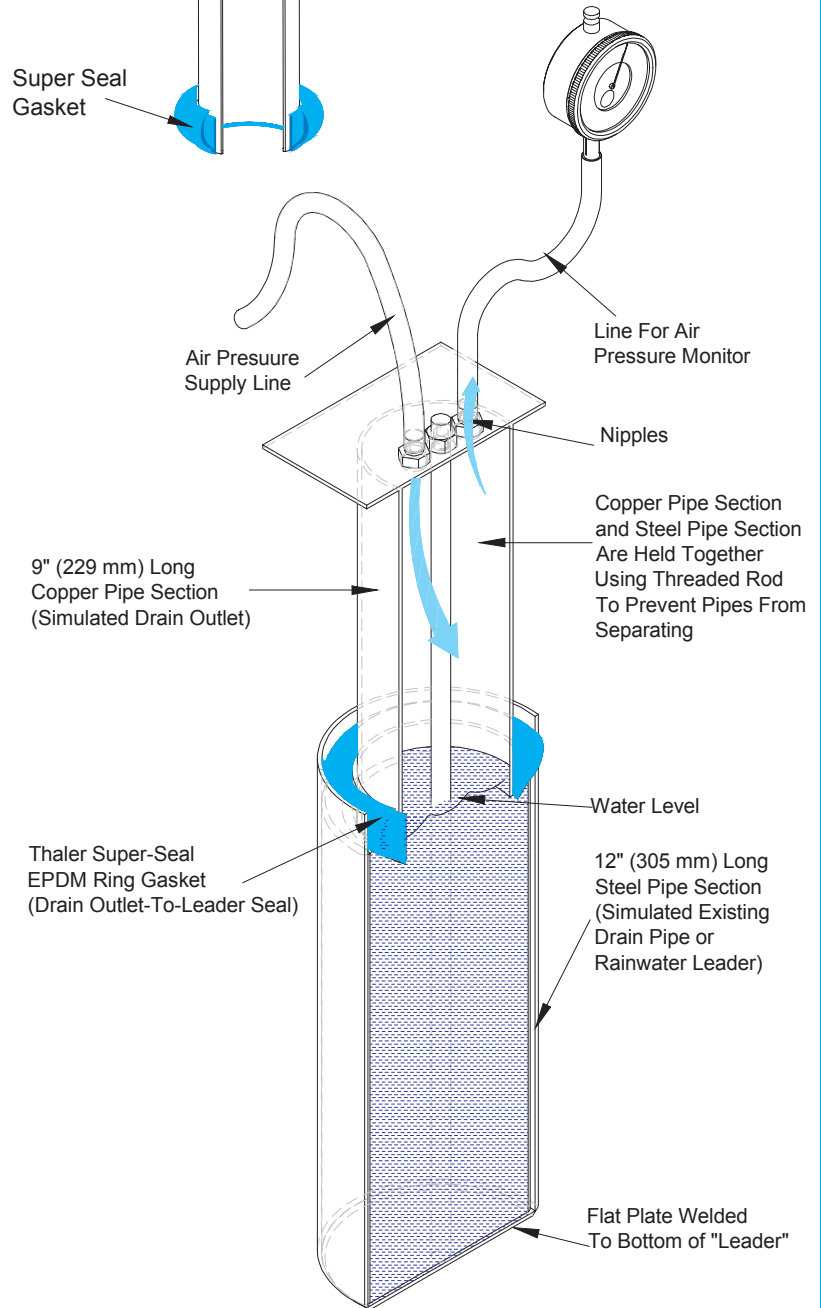
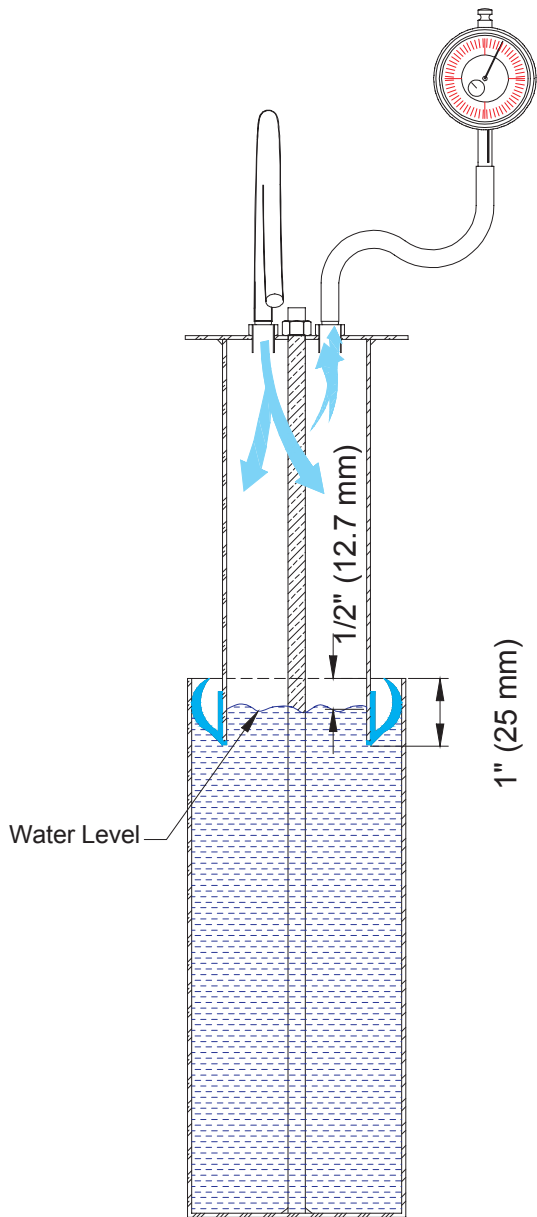
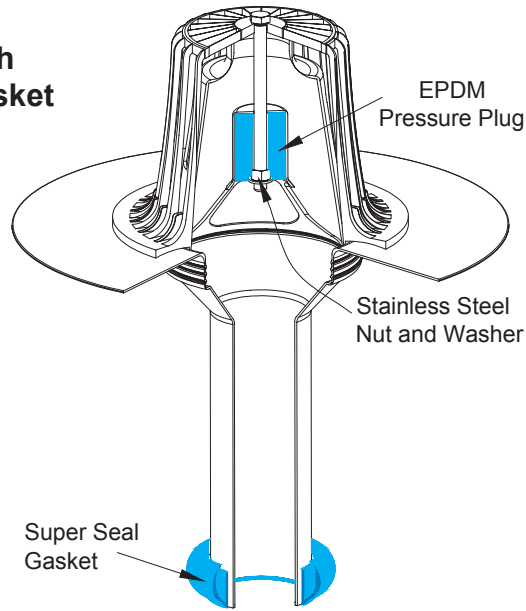
See reverse side of page for additional illustrations

\* Test performed by ITS (Intertek Testing Services), Mississauga, Ontario, Canada. A copy of the actual test report is available from Thaler upon request.

\*\* A cubic foot (28.32 L) of water weighs approximately 62.4 lbs (28.3 Kg). A one-inch (25 mm) high column of water exerts a pressure of 1/1728 of 62.4 (28.3 Kg) or .361 lbs (1.64 Kg) on one square inch (645 mm<sup>2</sup>).

On one square foot (0.0929 m<sup>2</sup>) the load is 1/12 of 62.4 (28.3 Kg) or 5.2 lbs (2.36 Kg). Stated another way, the measurement of a static head of 1" (25 mm) water column equals 5.2 psf or 0.036 psi (0.670 kPa or 0.248 kPa) pressure. The conversion factor for 1 inch of water (H<sub>2</sub>O) column (20°C, 68°F) is 3 374.110 Pa or 3.374 110 kPa.

**Thaler Retrofit  
Roof Drain With  
Super-Seal Gasket**



**TYPICAL TEST MOCK-UP SAMPLE OF DRAIN OUTLET-TO-LEADER SEAL**