

Cable Gland Series

1. INTRODUCTION

1.1 Purpose

This document provides the qualification test summary of TE Connectivity Cable Gland Series of HDC connector.

1.2 Scope

This specification covers the electrical, mechanical and environmental performance of cable gland.

1.3 Conclusion

Based on the test results, all meet the requirements according to TE Connectivity Design Objectives 108-137475.

1.4 Product Description

The following products are available in this system:

Item	Type
1	Metal cable gland
2	Multiple sealing insert metal cable gland
3	Metal cable gland special sealing
4	Metal cable gland EMC
5	Metal flat glands with multiple seal
6	Metal flat glands with normal seal
7	Clamp gland with normal seal
8	Metal clamp glands with multiple seal
9	Plastic cable gland
10	Plastic cable gland, thread lengthen

1.5 Qualification Test Sequence

Test or Examination	Test Group			
	A	B	C	D
	Test Sequence ¹⁾			
Visual and dimensional examination	1,5	1,5	1,5	1,3
Durability of marking	2			
Cable retention	3			
Cable anchorage	4			
Cold		3	3	
Dry Heat		4	4	
Degree of protection IP6X		2		
Degree of protection IPX8			2	
Salt Mist Cyclic Test				2

***Notes:**

1) Numbers indicate the sequence in which the tests are performed.

2. TEST PROCEDURE

General			
No.	Test Items	Requirements	Condition according to
2.1	Visual and dimensional examination	Meets requirements of product drawing	Visual and dimensional examination per 7.1 of IEC 62444

Mechanical			
2.2	Durability of marking	Marking shall be still readable according to 6.2 of EN61984 (If marking made by impression, molding, pressing or engraving or the like are not subjected to this test)	Test piston: Size 1 Wet test with liquid: water Duration: 10 cycles Force:5N IEC 60068-2-70 Test Xb 7.3.2 of EN61984
2.3	Cable retention	The displacement of mandrel shall not exceed 3 mm.	Loading a force on mandrel and maintaining for 5 min. Loading force See IEC 62444 9.2.
2.4.1	Cable anchorage	The test mandrel shall not turn by more than an angle of 45°.	Twist test for 1 min, twist value See IEC 62444 Table 3. IEC 62444 9.3.
2.4.2	Cable anchorage (only for armoured cable)	The max slip allowed is less than 3mm.	Loading a force on mandrel and maintaining for 5 min. Loading force See IEC 62444 Table 2 Type C. IEC 62444 9.4

Environmental			
2.5	Cold	No damage likely to impair function	Subject mated specimen to -40℃ Duration time:16h, Test Ab Per IEC 60512-11-10 Test 11j (IEC 60068-2-1)
2.6	Dry Heat	No damage likely to impair function	Subject mated specimen to +100℃ Duration time:168h Test Bb Per IEC 60512-11-9 Test 11i (IEC 60068-2-2)
2.7	Degree of protection IP6X	No ingress of dust	Test IP 6X according to IEC 60529
2.8	Degree of protection IPX8	No ingress of water	Test IP X8 according to IEC 60529 Water immersion: 1m, 24Hours, No water immerge. 7.3.6.3&7.3.7of EN61984
2.9	Salt Mist Cyclic Test	No damage likely to impair function	Follow: ASTM B117-11 Test Condition: 1).Salt spray: (5±1) % NaCl (m/m) concentration solution; 2).Temperature (35±1) °C 3). Precipitation rate of salt spray(1.0-2.0) ml (/ 80cm*h) 4).PH value: 6.5-7.2 5).Duration:72H

3. SUMMARY OF TEST RESULTS:

Examination of product – all test group

Test Group	Test Item	Test Result	Requirement	Judgment
Group A	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Durability of marking	No physical damage	No damage likely to impair function	passed
	Cable retention	No physical damage. The displacement of mandrel exceed less than 3 mm.	No damage likely to impair function	passed
	Cable anchorage	No physical damage. The max slip allowed is less than 3mm.	No damage likely to impair function	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
Group B	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Degree of protection IP6X	No ingress of dust	No ingress of dust	passed
	Cold	No physical damage	No damage likely to impair function	passed
	Dry Heat	No physical damage	No damage likely to impair function	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
Group C	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Degree of protection IPX8	No ingress of water	No ingress of water	passed
	Cold	No physical damage	No damage likely to impair function	passed
	Dry Heat	No physical damage	No damage likely to impair function	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
Group D	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Salt Spray Test	No physical damage	No damage likely to impair function	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed