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Certificate of Compliance

Apparatus: Cooper Capri Cable Glands.
Models: ADE-1F2 and ADE-4F
Relevant Specification used as Basis of Tests: NF EN 60529 October 1992 Amendments 1 and 2

This is to certify that, on the basis of the tests undertaken, the above models of Cable Glands are considered to comply the above standard with the severity IPX8 100m (11 bar) for 6 hours.

For specific details of the tests, see Cooper Capri Report N° 2013-308 dated July 2013.

Date of issue: 3rd July, 2013

Prepared by :

A handwritten signature in black ink, appearing to read "M. Philippe", written over a circular stamp or seal.

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Report n° 2013-308 Issue 0 - page 1/8

Test Report: Confidential Report of a water ingress test carried out on a range of cable glands

Report Number: 2013-308 issue 0

Report date: July 2013

Items Tested: Cooper Capri Cable Glands.

Models: ADE-1F2 and ADE-4F

Test specification: EN 60529 October 1992 (IEC60529ed2.1)
Amendments 1 and 2


Date of issue: 3rd July, 2013

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CP INE11.0001 



1 Manufacturer

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2 Apparatus

The following range of Cable Glands:

- **ADE-1F2** n°3 to n°17 for cable external diameter from 2,75 to 104mm, thread sizes **M10 to M110** or **NPT1/8" to NPT4"** inclusive
- **ADE-4F**. n°4 to n°17 for cable external diameter from 4,5 to 104mm, thread sizes **M10 to M110** or **NPT1/8" to NPT4"** inclusive
- The Metric threaded entry component is fixed to the enclosure using a Sealing Washer.
- The NPT threaded entry component is fixed to the enclosure using HTL thread sealant.

All these Models have the same special compression sealing ring, size according to the gland size, which applies compression to the cable sheath when compressed by the metal housing.

- ADE-1F2 is a single seal type Cable Gland, using only one sealing ring as define above.
- ADE-4F is a double seal type Cable Gland, using two sealing rings as define above.

The full range of these cable glands is already certified by INERIS, tested:

- Overpressure 30 bars 10 seconds
- IPX8 at a submersion of 30 meters for 7 days and

The individual cable gland tested are listed below:

- ADE-1F2 M20 n°6 and ADE-1F2 M63 n°11, fixed to the enclosure using a Sealing Washer.

- ADE-1F2 NPT1/2" N°5 and ADE-1F2 NPT2" N°11, fixed to the enclosure using HTL thread sealant.

3 Tests

The cable glands were tested for their ability to resist to ingress of liquid in accordance with the requirement of Degree of Protection IPX8 as specified in NF EN 60529 October 1992, including amendments 1 and 2 "Degrees of Protection Provided by Enclosure (IP Code)".

The full range of these cable glands is already certified by INERIS, tested:

- Overpressure 30 bars 10 seconds
- IPX8 at a submersion of 30 meters for 7 days and

The tests were conducted in between Jun 17 and July 3rd 2013.

The glands were fitted to the test boxes in accordance with the instruction sheet and were fitted with steel mandrels having the diameter as the minimum cable size for the purpose of these tests.

The test conditions for IPX8 were set at a submersion of 100 meters (11 bars) for 6 Hours.

4 Results

No Ingress was found as a result of the tests. The samples complied with the requirements of NF EN 60529 October 1992, including amendments 1 and 2.

5 Conclusions

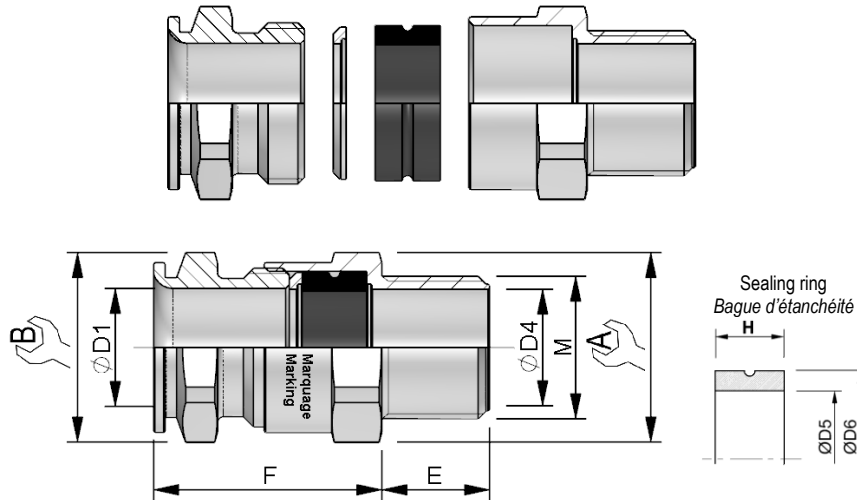
The cable glands as described in Section 2 have been tested and found to comply with the Degrees of Protection IPX8 as specified in NF EN 60529 : 1992, at a submersion of 100 meters (11 bars) for 6 Hours.

The results only apply to the particular samples tested. The above conclusion may be extended to cover the full ranges of glands as detailed in Section 6 as the components and compression mechanisms used are similar.

6 Drawings

Type : ADE

Version : 1F2 ISO

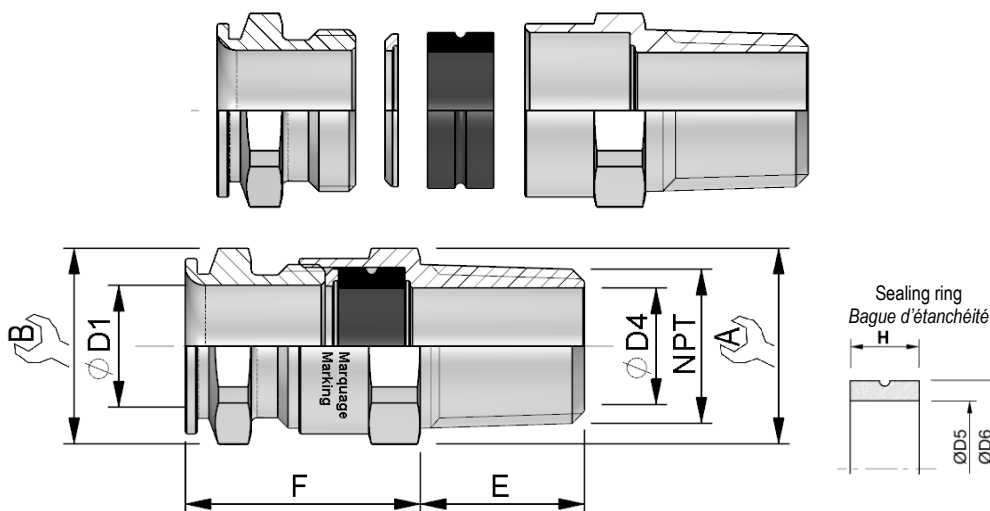


ISO M	E	A min	D4	Ø Externe Cable External Ø	ADE N°	B min	D1	F max	Seal ring D5	Seal ring D6	Seal ring H
10 x 1.5	13	15	5.7	2.75 - 5.5	3	15	5.7	24	5.5	10.2	6
12 x 1.5	15	15	5.7	2.75 - 5.5							
16 x 1.5	15	19	5.7	2.75 - 5.5							
20 x 1.5	15	24	5.7	2.75 - 5.5							
12 x 1.5	15	17	8.2	4.5 - 8	4	17	8.7	25	8.5	12.2	6
16 x 1.5	15	19	8.7	4.5 - 8.5							
20 x 1.5	15	24	8.7	4.5 - 8.5							
16 x 1.5	15	19	12.2	7 - 12	5	19	12.2	27.5	12	16.2	7.4
20 x 1.5	15	24	12.2	7 - 12							
25 x 1.5	15	30	12.2	7 - 12							
20 x 1.5	15	24	16.2	10 - 16	6	24	16.2	32	16	21.2	9
25 x 1.5	15	30	16.2	10 - 16							
25 x 1.5	15	30	20.7	13.5 - 20.5	7	30	21.2	36.5	21	27.2	10.8
32 x 1.5	15	36	21.2	13.5 - 21							
32 x 1.5	15	41	27.7	18 - 27.5	8	41	27.7	46	27.5	35.5	13.8
40 x 1.5	15	48	27.7	18 - 27.5							
40 x 1.5	15	48	34.2	23 - 34	9	48	34.2	50	34	43.5	15.6
50 x 1.5	16	55	34.2	23 - 34							
50 x 1.5	16	55	41.2	29 - 41	10	55	41.2	52	41	50.5	16.8
63 x 1.5	17	67	41.2	29 - 41							
50 x 1.5	16	64	45.2	35 - 45	11	64	48.2	56.5	48	58.5	18
63 x 1.5	17	67	48.2	35 - 48							
63 x 1.5	17	72	56.2	42 - 56	12	72	56.2	60	56	66.5	19.2
75 x 1.5	18	85	65.2	50 - 65	13	85	65.2	67.5	65	78	21.6
90 x 2	22	95	74.2	58 - 74	14	95	74.2	69	74	88	24
90 x 2	22	110	83.2	66 - 83	15	110	83.2	80	83	97	24
110 x 2	22	120	93.2	75 - 93	16	120	93.2	80	93	107	25.2
110 x 2	22	135	104.2	85 - 104	17	135	104.2	90	104	122	26.4

Toute cotes en mm / All dimensions mm

Type : ADE

Version : 1F2 NPT

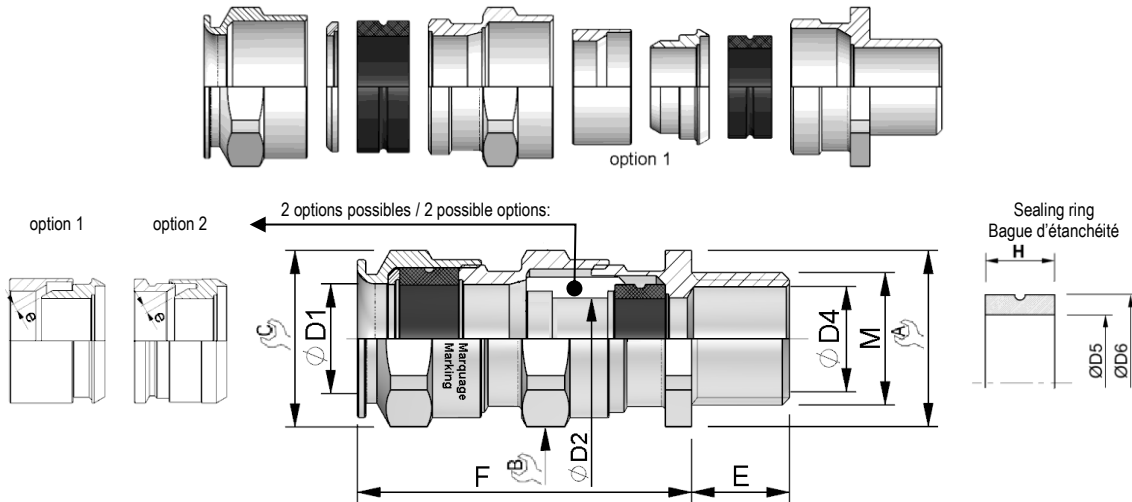


NPT	E	A min	D4	Ø Externe Cable External Ø	ADE N°	B min	D1	F max	Seal ring D5	Seal ring D6	Seal ring H
1/8" x 0.941	12	13	5.7	2.75 - 5.5	3	15	5.7	24	5.5	10.2	6
1/4" x 1.411	16.4	15	5.7	2.75 - 5.5							
3/8" x 1.411	16.6	19	5.7	2.75 - 5.5							
1/2" x 1.814	22.2	24	5.7	2.75 - 5.5							
1/4" x 1.411	16.4	17	8.2	4.5 - 8	4	17	8.7	25	8.5	12.2	6
3/8" x 1.411	16.6	19	8.7	4.5 - 8.5							
1/2" x 1.814	22.2	24	8.7	4.5 - 8.5							
3/8" x 1.411	16.6	19	12.2	7 - 12							
1/2" x 1.814	22.2	24	12.2	7 - 12	5	19	12.2	27.5	12	16.2	7.4
3/4" x 1.814	22.5	30	12.2	7 - 12							
1/2" x 1.814	22.2	24	15.7	10 - 15.5							
3/4" x 1.814	22.5	30	16.2	10 - 16							
3/4" x 1.814	22.5	30	20.7	13.5 - 20.5	7	30	21.2	36.5	21	27.2	10.8
1" x 2.208	27.3	36	21.2	13.5 - 21							
1" x 2.208	27.3	41	26.2	18 - 26							
1" 1/4 x 2.208	28	44	27.7	18 - 27.5							
1" 1/4 x 2.208	28	48	34.2	23 - 34	9	48	34.2	50	34	43.5	15.6
1" 1/2 x 2.208	28.5	55	34.2	23 - 34							
1" 1/2 x 2.208	28.5	55	41.2	29 - 41							
2" x 2.208	29.2	64	41.2	29 - 41							
2" x 2.208	29.2	64	48.2	35 - 48	11	64	48.2	56.5	48	58.5	18
2" 1/2 x 3.175	42.5	80	48.2	35 - 48							
2" x 2.208	29.2	72	53.2	42 - 53							
2" 1/2 x 3.175	42.5	80	56.2	42 - 56							
2" 1/2 x 3.175	42.5	85	62.7	50 - 62.5	13	85	65.2	67.5	65	78	21.6
3" x 3.175	44	90	65.2	50 - 65							
3" x 3.175	44	95	74.2	58 - 74							
3" x 3.175	44	110	78.2	66 - 78							
3" 1/2 x 3.175	45.2	110	83.2	66 - 83	15	110	83.2	80	83	97	24
3" 1/2 x 3.175	45.2	120	92.2	75 - 92							
4" x 3.175	46.5	120	93.2	75 - 93							
4" x 3.175	46.5	135	104.2	85 - 104							
4" x 3.175	46.5	135	104.2	85 - 104	17	135	104.2	90	104	122	26.4

Toute cotes en mm / All dimensions mm

Type : ADE

Version : 4F ISO



ISO M	E	A min	D4	Ø Interne Cable Internal Ø	Epaisseur Armure e Armor thickness	Ø Externe Cable External Ø	ADE N°	B min	D1	F max	Exter Seal Ring D5	Exter Seal Ring D6	Exter Seal Ring L	Inter Seal Ring D5	Inter Seal Ring D6	Inter Seal Ring H
10 x 1.5	15	17	5.7	2.75 - 5.5	0.2 - 0.9	4.5 - 8.5	4	17	5.7	41	8.5	12.2	6	5.5	10.2	6
12 x 1.5	15	17	5.7	2.75 - 5.5	0.2 - 0.9	4.5 - 8.5										
16 x 1.5	15	19	5.7	2.75 - 5.5	0.2 - 0.9	4.5 - 8.5										
20 x 1.5	15	24	5.7	2.75 - 5.5	0.2 - 0.9	4.5 - 8.5	5	19	8.7	46	12	16.2	7.4	8.5	12.2	6
12 x 1.5	15	19	8.2	4.5 - 8	0.2 - 0.9	7 - 12										
16 x 1.5	15	19	8.7	4.5 - 8.5	0.2 - 0.9	7 - 12										
20 x 1.5	15	24	8.7	4.5 - 8.5	0.2 - 0.9	7 - 12	6/5	24	8.7	51	16	21.2	9	12	16.2	7.4
16 x 1.5	15	24	8.7	4.5 - 8.5	0.2 - 1.25	10 - 16										
16 x 1.5	15	24	12.2	7 - 12	0.2 - 1.25	10 - 16										
20 x 1.5	15	24	12.2	7 - 12	0.2 - 1.25	10 - 16	6	30	12.2	57.5	21	27.2	10.8	16	21.2	9
16 x 1.5	15	30	12.2	7 - 12	0.2 - 1.25	13.5 - 21										
20 x 1.5	15	30	16.2	10 - 16	0.2 - 1.25	13.5 - 21										
20 x 1.5	15	41	16.2	10 - 16	0.2 - 1.6	18 - 27.5	7	41	16.2	68	27.5	35.5	13.8	21	27.2	10.8
25 x 1.5	15	41	20.7	13.5 - 20.5	0.2 - 1.6	18 - 27.5										
32 x 1.5	15	41	21.2	13.5 - 21	0.2 - 1.6	18 - 27.5										
25 x 1.5	15	48	20.7	13.5 - 20.5	0.2 - 1.6	23 - 34	8	48	21.2	76	34	43.5	15.6	27.5	35.5	13.8
32 x 1.5	15	48	21.2	13.5 - 21	0.2 - 1.6	23 - 34										
32 x 1.5	15	48	27.7	18 - 27.5	0.2 - 1.6	23 - 34										
32 x 1.5	15	55	27.7	18 - 27.5	0.2 - 2	29 - 41	9	55	27.7	88	41	50.5	16.8	34	43.5	15.6
40 x 1.5	15	55	34.2	23 - 34	0.2 - 2	29 - 41										
40 x 1.5	15	64	34.2	23 - 34	0.2 - 2.5	35 - 48										
50 x 1.5	16	64	41.2	29 - 41	0.2 - 2.5	35 - 48	10	64	34.2	97	48	58.5	18	41	50.5	16.8
50 x 1.5	16	72	41.2	29 - 41	0.2 - 2.5	42 - 56										
50 x 1.5	16	72	45.2	35 - 45	0.2 - 2.5	42 - 56										
63 x 1.5	17	72	48.2	35 - 48	0.2 - 2.5	42 - 56	11	72	41.2	102	56	66.5	19.2	48	58.5	18
50 x 1.5	16	85	45.2	35 - 45	0.2 - 2.5	50 - 65										
63 x 1.5	17	85	48.2	35 - 48	0.2 - 2.5	50 - 65										
63 x 1.5	17	85	56.2	42 - 56	0.2 - 2.5	50 - 65	12	85	48.2	117	65	78	21.6	56	66.5	19.2
63 x 1.5	17	95	56.2	42 - 56	0.2 - 2.5	58 - 74										
75 x 1.5	18	95	65.2	50 - 65	0.2 - 2.5	58 - 74										
75 x 1.5	18	110	65.2	50 - 65	0.2 - 3.15	66 - 83	13	95	56.2	124	74	88	24	65	78	21.6
90 x 2	22	110	74.2	58 - 74	0.2 - 3.15	66 - 83										
90 x 2	22	120	74.2	58 - 74	0.2 - 3.15	75 - 93										
90 x 2	22	120	83.2	66 - 83	0.2 - 3.15	75 - 93	14	120	74.2	140	93	107	25.2	83	97	24
90 x 2	22	135	83.2	66 - 83	0.2 - 3.5	85 - 104										
110 x 2	22	135	93.2	75 - 93	0.2 - 3.5	85 - 104										

Toute cotes en mm / All dimensions mm

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7 Summary

The following models and sizes of ADE cable glands were tested for their ability to resist the ingress of liquid for the Degree of protection IPX8 as specified by NF EN 60529: 1992 at a depth of 100m (11bars) for 6 hours:

- ADE-1F2 M20 n°6 and ADE-1F2 M63 n°11, fixed to the enclosure using a Sealing Washer.
- ADE-1F2 NPT1/2" N°5 and ADE-1F2 NPT2" N°11, fixed to the enclosure using HTL thread sealant.

The samples complied with the requirements of IPX8, at a depth of 100m (11bars) for 6 hours.

This IP rating at the same depth and for the same time can be extended to the full range of ADE-1F2 glands as they have the same sealing ring type and the same compression metal housing type.

This IP rating at the same depth and for the same time can be extended to the full range of ADE-4F glands as they have the same sealing ring type and the same compression metal housing type.