Aerospace series

Connectors, electrical, circular, bayonet locking, backshell

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Contents

1 Scope

This standard specifies the configuration, dimensions and mass of backshell of the family of bayonet coupling circular connectors. For receptacle and plugs associated with this backshell see ABS1054-003 and ABS1054-004 respectively.

2 Normative references

This Airbus Standard incorporates by dated or undated reference provisions from other publications. All normative references cited at the appropriate places in the text are listed hereafter. For dated references, subsequent amendments to or revisions of any these publications apply to this Airbus Standard only when incorporated in it by amendment of revision. For undated references, the latest issue of the publication referred to shall be applied.

ISO2768-1	General tolerances – Tolerances for linear and angular dimensions without individual tolerance indications
EN2424	Aerospace series - Marking of aerospace products
EN2591	Aerospace series – Elements of electrical and optical connections, Test methods [1]
EN3646-001	Aerospace series – Connectors, electrical, circular, bayonet coupling, operating temperature 175 °C and 200 °C continuous – Part 001: Technical specification [1]
EN4604-003	Aerospace series – Cable, electrical, for signal transmission Part 003: Coaxial cable 50 ohm, 200 °C, type WZ – Product standard [1]
ABS0386	Cable, WF, 2 cores twisted screened, kapton jacketed
ABS0777	General technical specification for standard parts
ABS0963-003	Aerospace series – Cable-fibre optic, type LF, +125 °C – Product standard
ABS0972	Aerospace series – Cable, electrical, quadrax, for digital data transmission, +200 °C max. Product standard
ABS1054-003	Aerospace series – Connectors, electrical, circular, bayonet locking, Part 003: Square flange receptacle
ABS1054-004	Aerospace series – Connectors, electrical, circular, bayonet locking, Part 004: Plug
ABS1111	Aerospace series – Contacts, electrical, twinax, female
ABS1112	Aerospace series – Contacts, electrical, twinax, male
ABS1379-005	Aerospace series – Adaptor for optical contacts, for connectors, ARINC404, ARINC600, EN3545, ABS1340,ABS1343, ABS1426, ABS1427 and ABS1054
ASNE0272	Cable-2 wire, twisted, screened, insulated, type TK (polyimide insulation + 200 °C
AIPS07-05-010	Installation of EN3646 connectors

3 Requirements

3.1 Configuration, dimensions, tolerances and mass

The configuration, dimensions, tolerances and mass shall conform with figure 1 and 2 and table 1 and 2.
All dimensions and tolerances are in millimeters. Tolerances not specified shall be in accordance with ISO2768-m.

[1] In preparation at the date of publication of this standard

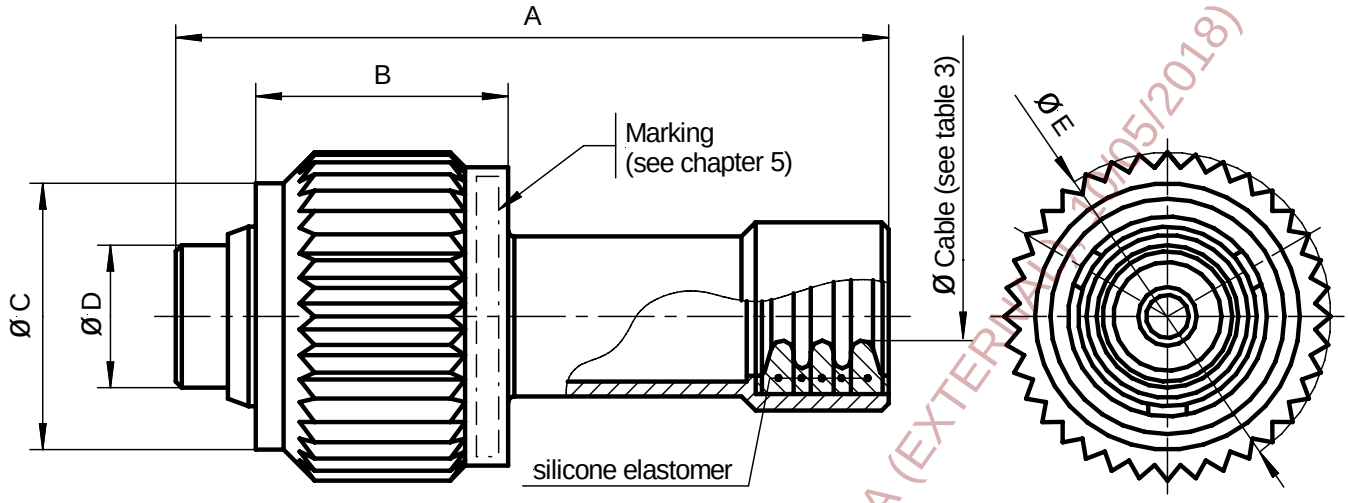


Figure 1: Configuration for material code A

Table 1: Dimensions and mass

Shell size code	A max.	B max.	Ø C max.	Ø D max.	Ø E max.	Thread T Class 2A (US designation)	N (teeth)	Mass max. (g)
08	37,10	14,30	15,00	8,03	18,50	0.5000 – 20 UNF	3	7,5

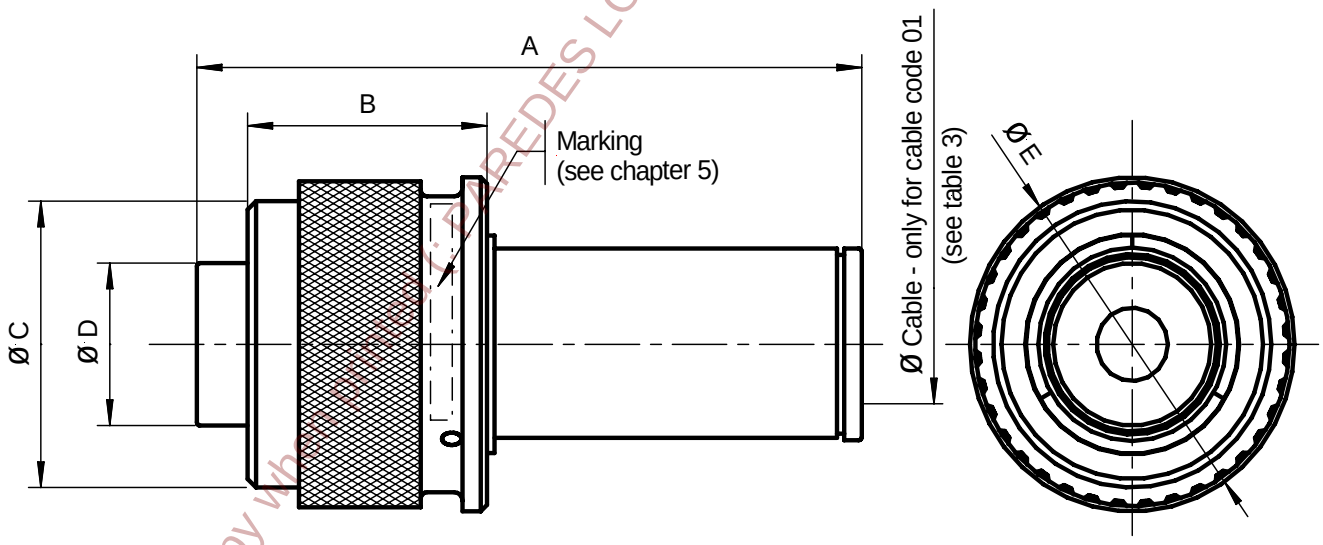


Figure 2: Configuration for material code B

Table 2: Dimensions and mass

Shell size code	A max.	B max.	Ø C max.	Ø D max.	Ø E max.	Thread T Class 2A (US designation)	N (teeth)	Mass max. (g)
08	35,3	12,8	14,8	8,13	15,8	0.5000 – 20 UNF	3	14,0

3.2 Cable codes

See table 3.

Table 3: Cable codes

Cable code	Usable cable types	Ø Cable (mm)	
		min.	max.
01	ABS0972KB24	4,20	4,70
02	EN4604-003WZ ABS0386WF24 ABS0963-003 ASNE0272TK22 [a] ASNE0272TK24 [a]	2,50	3,33
Note [a]: When using cable types TK22, TK24 it is mandatory to use shrink sleeve to increase the cable diameter, see the relevant AIPS07-05-010.			

3.3 Material code and surface treatment

See table 4.

Table 4: Material code and surface treatment

Material code	Material	Surface treatment
A	Aluminium alloy with seal in silicone elastomer	Non-conductive finish (black anodizing)
B	CRES	Passivation

3.4 Operating temperature

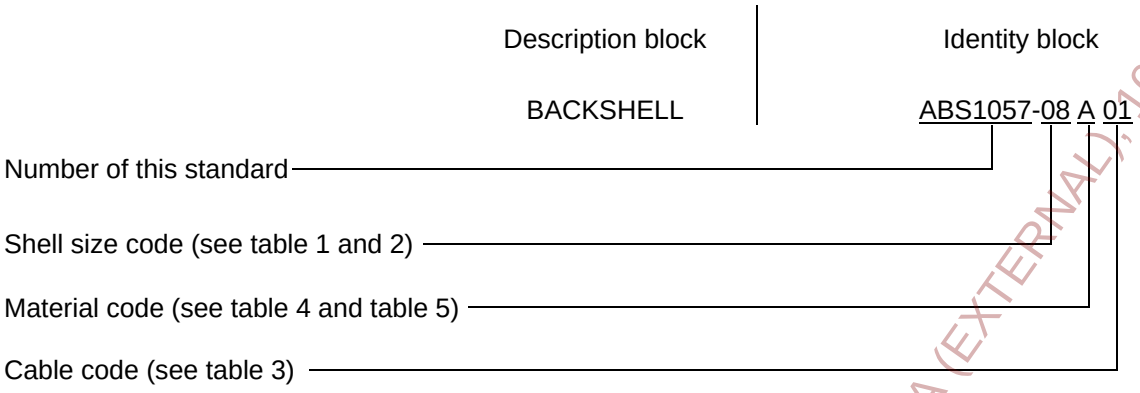
See table 5.

Table 5: Operating temperature

Material code	Operating temperature range (°C)
A	- 55 to + 125
B	- 55 to + 200

4 Designation

This type of standard shall be designated according to the philosophy of the following example:



5 Marking

5.1 Marking on the part

Parts shall be marked as per EN2424, style P with the date of manufacture (year, week).

5.2 Packaging

The labelling of the packaging shall indicate the following:

- The manufacturers name or trademark
- The date of manufacture (Year, week)
- The ABS reference
- The manufacturer's part number

6 Technical specification

ABS0777

7 Test

The tests of EN2591, applicable in the context of this standard as well as the details necessary for implementing them and for inspecting backshells characteristics, are given in table 6.

Table 6: Tests

EN2591-	Designation of test	Details
101	Visual examination	Initial examination: examination of backshells, fittings loose parts (contacts, etc.) Details to be examined: - identification - appearance - marking - surface finish Final examination: no loosening of parts, no crack, excessive wear, detached part shall be observed.
102	Examination of dimensions and mass	According to clause 6 and product standard. The checking of inaccessible dimensions on the finished product shall be carried out on part pieces or given by the quality organization of the manufacturer concerned.
305	Rapid change of temperature	T_A = max. temperature for class (+ X $^{+5}_{-0}$) °C T_B = (- 55 $^{+0}_{-5}$) °C
307	Salt mist	The backshells shall be suspended in the test chamber with non-metallic cords. Aluminum backshells shall be exposed for 48h and stainless steel for 500h.

(continued)

Table 6: Tests (concluded)

EN2591-	Designation of test	Details
314	Immersion at low air pressure	Applicable
315	Fluid resistance	See EN3646-001, table 10 (Resistance to fluids)
321	Damp heat, cyclic test	10 cycles At the end of the 10th cycle, with the back-shells still mated and subjected to high relative humidity, the insulation resistance is measured (test EN2591-206)
402	Shock	Method A Severity 100 Number of shocks; one each way for each of the three directions (i.e. six shocks in all)
403	Sinusoidal and random vibration	Method A, figure 1, level 2 Duration 4 h per axis on the three axis The test is performed: - 50 % of the time at ambient temperature; - 25 % of the time at minimum temperature; - 25 % of the time at maximum temperature.

8 Qualification

8.1 Sampling and definition of specimens

Four samples backshells of each size shall be provided.
These sample backshells shall be prepared as instructed in 8.2.

8.2 Preparation of specimens

All samples shall be coupled to a qualified connector or simulation there of unless otherwise specified in the product standard. All specimens shall be wired unless otherwise specified. 50 % of the specimens shall be wired with a minimum cable bundle diameter and 50 % of the specimens with a maximum in accordance with the cable entry range specified in the product standard of connector.

9 Example of installation

See figure 3 and table 7.

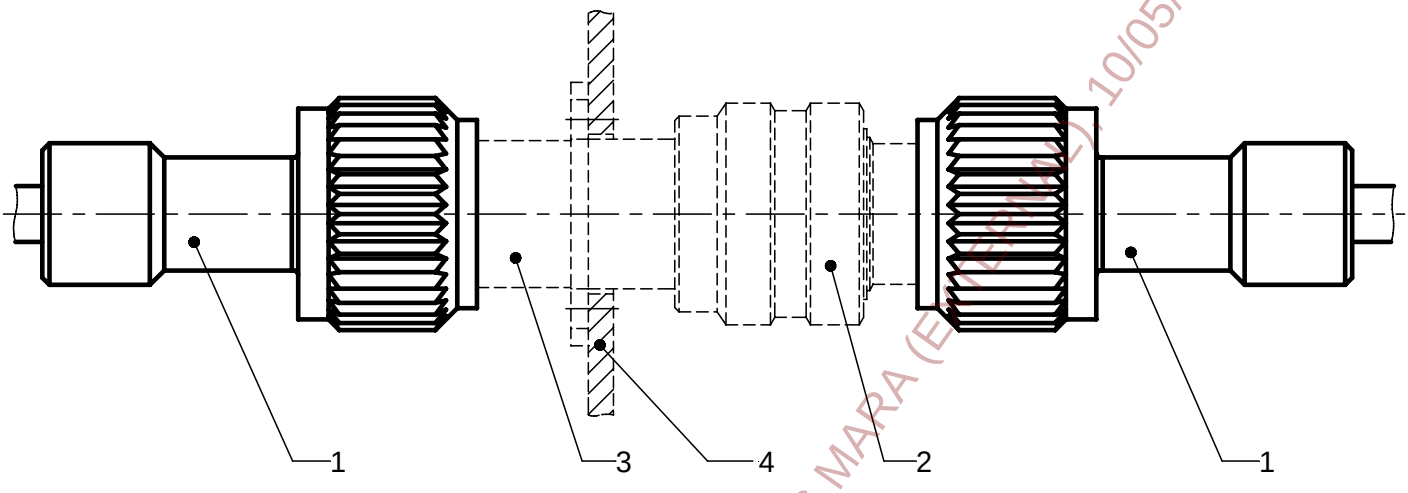


Figure 3: Example of installation

Table 7: Description

Position	Description
1	Backshell (ABS1057)
2	Plug (ABS1054-004)
3	Receptacle (ABS1054-003)
4	Panel

RECORD OF REVISIONS

Issue	Clause modified	Description of modification
1 01/03		New standard.
2 12/04		Figure 1 modified. Table 2, cable code 02, diameter of cable added and note [a] added. Normative references, the title of AIPS07-05-010 modified.
3 10/07	 Chapter 1 Table 5 Chapter 7 Table 6	New template. Information about the temperature range in chapter 1 deleted. Figure 2 and table 2 with new material code B added. New material code B with temperature range added. All refers of inspecting for connectors into inspecting for backshells corrected. Test details as per EN2991-305 and ,-307 in accordance with new material modified.