EADS CORPORATE STANDARDIZATION	**NORME D'ETUDES** **SOLID RIVETS ALUMINIUM ALLOY, 100° REDUCED COUNTERSUNK HEAD**	**ASNA2049** Indice : **T** Date : **03.2013**

1 SCOPE

The purpose of this ASN is to definie the dimensions, tolerances, required characteristics and the mass of aluminium solid rivets with 100° reduced countersun k head.

2 NORMATIVE REFERENCES

EN 6104	Aerospace serie - rivet, solid, in aluminium or aluminium alloy - inch series technical specification
EN 2424	Aerospace serie - marking of aerospace products
EN 2115	Aerospace serie - aluminium alloy 2117-T42 wire for solid rivets d = 10 mm
EN 2116	Aerospace serie - aluminium alloy 2017A-H13 wire for solid rivets d ≤ 10 mm
EN 3115	Aerospace serie - aluminium alloy 7050- T73 wire for solid rivets d = 10 mm
MIL-DTL-5541	Chemical conversion coatings on aluminum and aluminum alloys

These documents shall be consulted at the latest issue in effect.

Keywords: Solid river (TC) – Small head rivet – Countersunk head rivet.

Written by : Innovation Works	Corporate Quality Office Standardization	For information, To contact the team standardisation EADS by E-mail : corporate.standardization@eads.net
R. LEGLAND	**S. DROGOUL**	

3 REQUIRES CHARACTERISTICS

3.1 Configuration - Dimensions – Tolerances

3.1.1 The configuration shall be in accordance with the figure 1.

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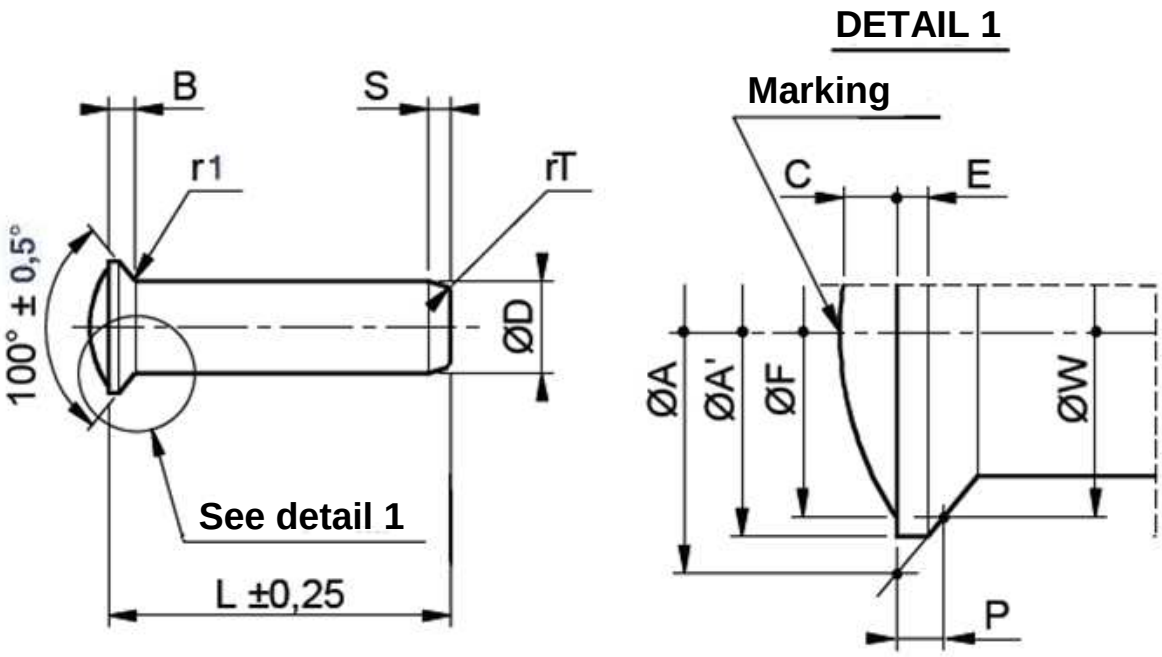


FIGURE 1 Configuration

3.1.2 Dimensions, tolerances and mass shall be in accordance with the figure 1, tables 1 and 2

TABLE 1 – Dimensions - Tolerances

Dimensions in mm

Code ∅	Nominal Diameter D	D*	A	A' mini.	B + 0,025 0	C + 0,050 0	E	F ± 0,127	P	W	S Réf.	rT ± 0,254	r1 maxi.
32	3,2	3,21 3,15	4,970 4,785	4,424	0,726	0,076	0,15 0,07	3,530	0,358 0,269	4,135 4,130	0,78	0,99	0,25
40	4,0	4,00 3,94	6,271 6,085	5,725	0,944	0,076	0,15 0,07	4,826	0,480 0,388	5,151 5,146	0,99	1,24	
48	4,8	4,79 4,73	7,660 7,533	7,172	1,168	0,101	0,15 0,07	5,156	0,635 0,533	6,200 6,195	1,19	1,49	

*) An increase in stem diameter of 0,025 mm is permissible at the base of the head on 2,54mm.

Tolerances:

– Run-out between the conical surface and the shank : 0,25 mm.

– Maximum inclination of the head axix with respect to the shank axis: 0,5°.

TABLE 2 - Length – Mass - Tolerances

Code ∅	L ± 0,25 (mm)															
	06	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**22**
32	+	+	+	+	+	+	+	+	+	+						
Mass (g)	0,14	0,16	0,18	0,21	0,23	0,25	0,27	0,30	0,32	0,34						
40			+	+	+	+	+	+	+	+	+	+	+	+	+	
Mass (g)			0,29	0,33	0,36	0,40	0,43	0,47	0,50	0,54	0,57	0,61	0,64	0,68	0,71	
48					+	+	+	+	+	+	+	+	+	+	+	+
Mass (g)					0,54	0,59	0,64	0,69	0,74	0,79	0,85	0,90	0,95	1,00	1,05	1,15

Lengths missing in table can be created mm by mm, e.g. length code 21 between 20 and 22mm.

3.2 Material and Finish

3.2.1 Material and finish shall be in accordance with table 3.

TABLE 3 – Material and Finish

Diameter Code ∅	Matériau Code	Surface Treatment	Code
32	DC aluminium alloy 2117-T42 as per EN2115	Yellow Chromating (A1200) As per MIL-DTL-5541 Class 1A	J
40 and 48	DE* aluminium alloy 2117A-W		
	DX aluminium alloy 2017A-T42 as per EN2116		
	DK aluminium alloy 7050-T73 as per EN3115		

(*) The rivets with DE code will be replaced by rivets DX code.

4 DESIGNATION

4.1 New designation

Each rivet shall be designated as in the following example

:

Description block[1)]	**Identifier block[2)]**
RIVET	ASNA2049 DC J 32 08

Number of the standard
Material code (see table 3)
Finish code (see table 3)
Diameter code (see table 1)
Solid rivet length (see table 2)*

NOTE – Where necessary, the compagny code F5442[3)] shall be specified between the description block and the identifier block

* For supplying purpose only

NOTE – The news designation is interchangeable with the old designation

– ASNA2049DCJ03215 (old designation)

– ASNA2049DCJ3215 (new designation)

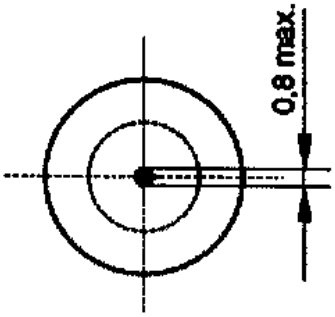
5 MARKING

5.1 Material identification

The symbol on the solid rivet head shall be in accordance with figure 2

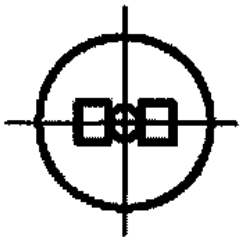
FIGURE 2: Solid rivet identification for material

Solid rivet identification for material 2117



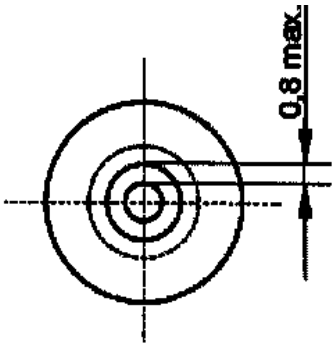
Indented 0,2 mm max.

Solid rivet identification for material 2017A



Raised 0,2 mm max.

Solid rivet identification for material 7050



Embossed 0,2 mm max.

Dimensions in mm

[1)] Optional.
[2)] The identifier block shall be written without spaces. Those in the example are only intented to facilitate reading.
[3)] Company code assigned to EADS Corporate Standardization. F5442 is the designer's code for the present standard.

5.2 Manufacturers identification

Each solid rivet shall be marked as per EN2424 categories F

6 TECHNICAL SPECIFICATION

Aluminum solid rivet shall be conform to requirements of EN6104.

7 MANUFACTURERS

Refer to the list of qualified manufacturers and products.

RECORD OF REVISION

Issue [1)]	Paragraph Modified	Description of modification	Reason
A (08.84)		New standard.	Drawn up by A/DET/D.
B to E (08.85)		Revised under A/DET/D.	
F (12.85)		Standard revised.	Standard incorporated in the M.G.E.
G (05.86)		Typeset.	
H (03.87)	4	Old designation renplaced by new designation for new design studies.	DA request.
J (09.88)	2	The round-tipped rivet (optional shape) becomes the sole definition of the rivet. Standard revised.	DA request. CN/DIR 1 AECMA rules applied.
K (05.89)	4.3 5	Shear strenght 280 MPa changed to 270 to 310 for Ø codes 040 and 048. Designation: (*) added for after-sales departments.	DA request following note N°60110 dated 03/04/89. DA request.
L (09.97)	3.3 Table 3	Surface treatment modified. Gold colour A1200 chromating for materials 2017A and 2117 and light colour A1200 chromating for material 7050 changed to gold colour a1200 chromating or light colour A1200 chromating for materials 2017A, 2117 and 7050.	BA request following note N°4370617/96 du 10/96.
M (12.97)	2 3.1, 3.2, Table 1 3.3 Table 3 7	Reference ASTM-E-112 added. Dimension G deleted. Manuel attachment of 2017A-T4 rivet on delivery condition (code DX) added. Shear strength values changed: – 180 changed to 195 – 255 changed to 260 Specific requirements for 2017 A rivets attached on the delivery condition added.	BA request further to note N°564 1527/97 dated 10/97 and N°564 2186/97 dated 12/97.
N (06.02)	Page 1 6	«AEROSPATIALE» changed to «EADS». Paragraph revised.	Group trade name changed. BE EADS Toulouse request. Accordance with technical specification ASNA2841.
P (02.05)	3.2 Table 1	Code 040, correction of the value P maxi: O,276 becomes 0,480	Airbus France ESWT request dated 12/3 /2004
R (06.08)	All	Standard completely revised	AIRBUS request dated 03/04/2008

1) The issues I, O, Q and X are not used.

RECORD OF REVISION CONT'D

Issue [1)]	Paragraph Modified	Description of modification	Reason
S (03.10)	1	The title « solid rivets, countersunk head » has been changed into "full-rivet aluminum alloy reduced countersunk head"	AIRBUS request dated 03/11/2009
	2	The references to the following standards : NFL21-207, ASTM E-112 and ASNA2841 were removed and changed by EN6104, EN2115, EN2116, EN3115, MIL-DTL-5541.	
	3, Figure 1	« Figure 1 : configuration, dimensions, tolérance » added. « r = 0,25 max » replaced by « r1 ». « T » replaced by « rT »	
	3, Tableau 1	Title: « dimensions, tolérances » added. Tolerances for dimension B added. Tolerance concentricity of the head added. « S ±0,254 » changed by « S Ref. » The diameter code « 0xx » has been changed by xx	
	3, Table 2	Title « Length, mass, tolerances » added.	
	3, Table 3	Title « Material and Finish » added. The columns: « min. shear strength and attachment » deleted. Surface treatment « anodizing as per MIL-A-8625 type II class 1 » deleted. Materials specifications added.	
	4	The designation of solid rivets changed. ASNA2049DXJ032-8 changed by ASNA2049DXJ3208. Figures « Material Identification » 2117 and 2017A added.. Change marking for 7050. The note of procurement department deleted.	
	5	A figure for the identification of the material 2117 and 2017A added Change figure for marking material 2117 and 2017A. The marking is in accordance with EN2424 class F.	
	6	Delete the contents of paragraph 6. The technical specification is in accordance with EN6104**.**	
T	3.1.2	LTC reference deleted B Ref becomes B	Airbus France request by E-mail dated:06/03/2013.
	4.1	Addition of the interchangeability between old and new designation.	
	5.1	Addition of marking information.	
	Tableau 3	Modification of the presentation and the finish for the material code: DC,DE*,and DX.	

1) The issues I, O, Q and X are not used.