CPC BELGELENDİRME MUAYENE VE DENEY HİZMETLERİ TİC. LTD. ŞTİ.
Çamlıca Mah. (Timko Eti) Anadolu Blv. No:20-R Blok No:4 Yenimahalle/Ankara
www.cpcert.org

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European Technical Assessment

ETA-21/0417 of 29.06.2021

General Part

Technical Assessment Body issuing the European Technical Assessment:
CPC BELGELENDİRME MUAYENE VE DENEY HİZMETLERİ TİC. LTD. ŞTİ.

Trade name of the construction product	**ALUTECHBOND**
Product family to which the construction product belongs	*Thin metal composite sheet*
Manufacturer	SİSTEM ALÜMİNYUM SAN. VE TİC. A.Ş.
Manufacturing plant(s)	Ergene-1 OSB, Vakıflar OSB Mh. D100 Cd. No: 13/1 59930 Ergene / TEKİRDAĞ TURKEY
This European Technical Assessment contains	4 pages
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 210046-00-1201 Thin Metal Composite Sheets

1. Technical description of the product

The products are thin metal composite sheets (TMCS). TMCS consists of two thin layers of metallic skin, which are sandwiching a core in a continuous co-extrusion process. External face of metallic skin can be pre-coated or not. The joining of metallic skins with core is achieved either by adhesive. The bond is formed by temperature and pressure under controlled conditions. The product is subsequently cut to range of panel sizes.

"Alutech bond 100-A2", "Alutech bond 200-A2" are composed by;

- Inner and outer faces are aluminium sheets according to EN 485-2 or EN 485-4. Sheets are coated with PVDF or HDPE
- Mineral incombustible core
- Adhesive layer for bonding faced skins and core through a continuous process

"Alutech bond 100-B1", "Alutech bond 200-B1" are composed by;

- Inner and outer faces are aluminium sheets according to EN 485-2 or EN 485-4. Sheets are coated with PVDF or HDPE
- Mineral filled fire retardant core
- Core through a continuous process

Table 1: Components

TMCS	Component	Characteristics	Requirements
Alutech bond 100-A2	Removable protection film	Aspect Thickness (mm)	White-Red-Blue 0,07-0,09 mm
	Coating of alloyed aluminium external sheet	Thickness	25 micron (+/-5)
	Aluminium Sheets	Thickness (Top-Bottom) Linear thermal expansion coefficient	0,50 mm / 0,50 mm -
	Adhesive	Thickness (Top-Bottom) Colour	0,08 mm / 0,08 mm White
	Mineral core	Aspect Thickness (For 4 mm panel) Composition density	White 3 mm 1,85-1,9 g/cm³
Alutech bond 200-A2	Removable protection film	Aspect Thickness	White-Red-Blue 0,07-0,09 mm
	Coating of alloyed aluminium external sheet		25 micron (+/-5)
	Aluminium Sheets	Thickness (Top-Bottom) Linear thermal expansion coefficient	0,40 mm / 0,40 mm -
	Adhesive	Thickness Colour	0,08 mm White
	Mineral core	Aspect Thickness (For 4 mm panel) Composition density	White 3 mm 1,85-1,9 g/cm³
Alutech bond 100-B1	Removable protection film	Aspect Thickness	White-Red-Blue 0,07 mm
	Coating of alloyed aluminium external sheet		25 micron (+/-5)
	Aluminium Sheets	Thickness (Top-Bottom) Linear thermal expansion coefficient	0,50 mm / 0,50 mm -
	Adhesive	Thickness (Top-Bottom) Colour	0,086 mm + 0,086 mm White
	Mineral filled core	Aspect Thickness (For 4 mm panel) Composition density	White-Grey 2,8mm-3,20 mm 1,46-1,5 g/cm³
Alutech bond 200-B1	Removable protection film	Aspect Thickness	White-Red-Blue 0,07 mm
	Coating of alloyed aluminium external sheet		25 micron (+/-5)
	Aluminium Sheets	Thickness Linear thermal expansion coefficient	0,40 mm / 0,40 mm -
	Adhesive	Thickness Colour	0,086 mm + 0,086 mm White
	Mineral filled core	Aspect Thickness (For 4 mm panel) Composition density	White-Grey 3 mm – 3,4 mm 1,46-1,5 g/cm³

2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

The product (TMCS) is intended to be used for manufacturing of:

- Cladding elements (cassettes/coffering, pa1nels) in external and internal wall cladding kits
- Parts (filling elements) of partition kits
- Filling elements in external or internal supported ceilings
- Rail filling
- Substrate boards for information and orientation systems.

The provisions made in this European Technical Assessment are based on an assuming working life of 25 years as minimum according to EAD, provided that the TMCS are subject to appropriate use and maintenance. Indications on working life is not guaranteed by producer.

3. Performance of the product and references to the methods used for its assessment

3.1 Reaction to fire

Table 2: Fire classifications of the products

TMCS Type	Class
Alutech bond 100-A2	A2, s1, d0
Alutech bond 200-A2	A2, s1, d0
Alutech bond 100-B1	B1, s1, d0
Alutech bond 200-B1	B1, s1, d0

3.2 Flexural performance

3.2.1 Bending performance in four-point test arrangement

Table 3: Four point bending strengths

TMCS Type	Performance		Average value	Standard deviation	Characteristic value ($R_{bend,k}$)
Alutech bond 100-A2	Bending strength $R_{bend,INI}$	MPa	121,09	2,13	116,44
	Bending modulus of elasticity E_{bend}	GPa	2031,91	26,86	1973,35
Alutech bond 200-A2	Bending strength $R_{bend,INI}$	MPa	104,36	0,67	102,89
	Bending modulus of elasticity E_{bend}	GPa	1791,24	63,33	1653,19
Alutech bond 100-B1	Bending strength $R_{bend,INI}$	MPa	121,15	2,82	114,99
	Bending modulus of elasticity E_{bend}	GPa	1734,58	41,67	1643,74
Alutech bond 200-B1	Bending strength $R_{bend,INI}$	MPa	110,39	1,76	106,56
	Bending modulus of elasticity E_{bend}	GPa	1769,23	54,39	1650,66

3.2.2 Flexural strength in three-point test arrangement

Table 4: Three point flexural strengths

TMCS Type	Performance		Average value	Standard deviation	Characteristic value ($R_{bend,k}$)	Remarks
Alutech bond 100-A2	Bending strength $R_{flex,INI}$	MPa	125,07	0,75	123,43	No breakage
Alutech bond 200-A2	Bending strength $R_{flex,INI}$	MPa	105,77	0,77	104,09	No breakage
Alutech bond 100-B1	Bending strength $R_{flex,INI}$	MPa	136,05	1,22	133,40	No breakage
Alutech bond 200-B1	Bending strength $R_{flex,INI}$	MPa	113,14	0,90	111,18	No breakage

3.5 Torque peel strength

Table 5: Torque peel strength

TMCS Type	Avarage peel torque (T) [mm*N/mm]
Alutech bond 100-A2	18,30

3.6 Hard body impact resistance

Table 6: Hard body impact resistances at 23^{0}C

Hard body impact resistance at 23^{0}C				
TMCS Type	Impact			
	1 N*m	3 N*m	5 N*m	10 N*m
Alutech bond 100-A2	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark
Alutech bond 200-A2	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark
Alutech bond 100-B1	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark
Alutech bond 200-B1	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark

Table 7: Hard body impact resistances at 20^{0}C

Hard body impact resistance at -20^{0}C				
TMCS Type	Impact			
	1 N*m	3 N*m	5 N*m	10 N*m
Alutech bond 100-A2	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark
Alutech bond 200-A2	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark
Alutech bond 100-B1	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark
Alutech bond 200-B1	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark	No cracks Impact mark

3.7 Thermal conductivity

Table 8: Thermal conductivities

TMCS Type	Thermal resistance (m^{2}K/W)	Thermal conductivity (W/mK)
Alutech bond 100-A2	0,035	0,488
Alutech bond 200-A2	0,035	0,351
Alutech bond 100-B1	0,274	0,449
Alutech bond 200-B1	0,039	0,330

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

With regards to reaction to fire for products covered by this EAD the applicable European legal act is Decision 2003/640/EC; System 3.

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

The ETA issued for this kit on the basis of agreed data/information which identifies the product that has been assessed and judged. Detailed description and conditions of the manufacturing process of the product, and all the relevant desing and installation criteria of this product are specified in the manufacturer's technical documentation deposited with CPC. It is the manufacturer's responsibility to make sure that all those who use product are appropriately informed of specific conditions according to sections 1, 2, 4 and 5 including the annexes of this ETA

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By
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General Manager