

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-20/0653
of 25 November 2020

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

"Armalok 100" and "Armalok 50"

Product family
to which the construction product belongs

Open cell factory made rigid polyurethane foam (PUR)
and polyisocyanurate foam (PIR) products for building
equipment and industrial installations

Manufacturer

ARMACELL GMBH
Robert-Bosch-Straße 10
48153 Münster
DEUTSCHLAND

Manufacturing plant

Plant 1

This European Technical Assessment
contains

5 pages which form an integral part of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 041094-00-1201

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Specific Part

1 Technical description of the product

This European Technical Assessment applies to the concentric pipe sections made of rigid polyurethane foam (PUR) with fire protection equipment with the designations:

"Armalok 100" and "Armalok 50"

The concentric pipe sections have an open cell content over 90 %.

Carbon dioxide (CO₂) is used as blowing agent.

The nominal thickness of the concentric pipe sections is 20 mm to 60 mm.

The concentric pipe sections "Armalok 100" and "Armalok 50" have a surface facing of approximately 0.25 mm PVC-foil and an inner facing of approximately 0.1 mm paper laminates.

The seams are closed with an adhesive closure (weight 2.5 g/m ± 5 %).

The European Technical Assessment has been issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed. The European Technical Assessment applies only to the product corresponding to this agreed data/information.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The pipe sections are used to limit the heat emission of heat distribution and hot-water pipelines in buildings for metallic pipes as well as plastic pipes and multi-layer composite pipes, which have at least the reaction to fire class E.

The performance according to section 3 only applies if the pipe sections are installed according to the manufacture's installation instructions and if they are protected from precipitation, wetting or weathering during transport and storage before installation.

For the application of the pipe sections the relevant national provisions shall be taken into account¹.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the pipe sections of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works

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

For sampling, conditioning and testing the provisions of the EAD No 041094-00-1201 apply.

¹ Note: In Germany the Energy Saving Ordinance ("Verordnung über energiesparenden Wärmeschutz und energiesparende Anlagentechnik bei Gebäuden (Energieeinsparverordnung – EnEV")) or the Buildings Energy Act ("Gesetz zur Einsparung von Energie und zur Nutzung erneuerbarer Energien zur Wärme- und Kälteerzeugung in Gebäuden (Gebäudeenergiegesetz – GEG")) apply.

English translation prepared by DIBt

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire test acc. to EN ISO 11925-2:2010	Class E ² acc. to EN 13501-1:2018

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Trace quantities of water-soluble ions and pH-value	No performance assessed

3.3 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Geometrical properties length test acc. to EN 13467:2018 thickness test acc. to EN 13467:2018 internal diameter test acc. to EN 13467:2018 squareness test acc. to EN 13467:2018 linearity test acc. to EN 13467:2018	Tolerance ± 3 mm ± 2 mm - 0 mm; + 2 mm ³ - 0 mm; + 3 mm ⁴ no performance assessed no performance assessed
Density test acc. to EN 13470:2001	"Armalok 100" 25 kg/m ³ to ⁵ 41 kg/m ³ "Armalok 50" 20 kg/m ³ to ⁵ 41 kg/m ³
Maximum application (service) temperature	No performance assessed
Minimum application (service) temperature	No performance assessed

² The reaction to fire class E applies when used on metallic pipes with a nominal thickness of the thermal insulation from 20 mm to 60 mm. Class E applies to "Armalok 100" and "Armalok 50" when used on plastic pipes or multi-layer composite pipes, which have at least the reaction to fire class E, with a nominal thickness of the thermal insulation from 20 mm to 50 mm.

³ Applies to internal diameter < 170 mm

⁴ Applies to internal diameter ≥ 170 mm

⁵ Density without adhesive closure and surface facings. Only for the thermal insulation made of rigid polyurethane foam.

3.6 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance					
Thermal conductivity at a reference temperature of ϑ °C test acc. to EN 8497:1996 in accordance with EN ISO 13787:2003	Declared value: ⁶					
	"Armalok 100"					
	ϑ °C	10	20	30	40	50
	λ_D W/(m·K)	0,032	0,034	0,035	0,036	0,038
	"Armalok 50"					
	ϑ °C	10	20	30	40	50
	λ_D W/(m·K)	0,034	0,035	0,037	0,038	0,039
Conversion of humidity acc. to EN ISO 10456:2007+AC:2009 moisture conversion factor (23 °C/50 % rel. humidity to 23 °C/80 % rel. humidity):	F _m = 1,00					
Closed cells content	< 10 %					

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

In accordance with EAD No 041094-00-1201, the applicable European legal act is: 1999/91/EC.
The system to be applied is: System 3

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin 25 November 2020 by Deutsches Institut für Bautechnik

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beglaubigt:
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⁶ The declared value is representative for at least 90 % of the production with a confidence level of 90 % and applies to the density range mentioned in section 3.