

Declaration of Performance

G4207OPCPR

1. Unique identification code of the product-type:

DriTherm® Cavity Slab 32, FactoryClad Roll 32, FrameTherm® Roll 32, FrameTherm® Slab 32, Kalzip Plus 32, Rafter Roll 32, Formstykker 32, KI Fit 032, OmniFit® Slab 32, IWI EcoBatt Slab 32, Murisolering 32, KI Glass Roll 32, KI Glass Slab 32

2. Intended use or uses:

Thermal Insulation for Buildings (ThIB)

3. Manufacturer:

Knauf Insulation Ltd.

PO Box 10, Stafford Road, WA10 3NS St. Helens, Merseyside

UK

www.knaufinsulation.com - dop@knaufinsulation.com

4. Authorised representative:

Knauf Insulation AB Gardatorget 1 412 50 Goteborg Sweden

5. System or systems of assessment and verification of constancy of performance:

AVCP System 1 for Reaction to Fire A1, A2, B, C

AVCP System 3 for Reaction to Fire D, E

AVCP System 4 for Reaction to Fire F

AVCP System 3 for the other characteristics

6a. Harmonized Standard:

EN 13162:2012 + A1:2015

Notified body or bodies:

AVCP System 1: (Notified certification body) 0402 - RISE Research Institutes of Sweden AB

AVCP System 3: (Notified testing laboratory) 0402 - RISE Research Institutes of Sweden AB

6b. European Assessment document: not applicable

European Technical Assessment: not applicable

Technical Assessment Body: not applicable

Notified body/ies: not applicable

7. Declared Performances:

See next page

G4207OPCPR 18-06-25 Version 22 1/15





Essential Characteristics	G4207OP	CPR	Harmonised technical standard
	Performance	DriTherm® Cavity Slab 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λo 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	75-150	
	Thickness tolerance	T4	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat, weathering, ageing / degradation	Durability Characteristics	NPD {a}	
Durability of thermal resistance against	Thermal Resistance	NPD{b}	
heat, weathering, ageing / degradation	Thermal conductivity	NPD	_
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Durability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	WS	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	-
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance deter	mined	

G42070PCPR 18-06-25 Version 22 2/15





Essential Characteristics	G4207OP	PCPR	Harmonised technical standard
	Performance	FactoryClad Roll 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	80-140	
	Thickness tolerance	T2	
Reaction to Fire	Reaction to fire	A1	\dashv
Durability of reaction to fire against heat,	Durability Characteristics	NPD {a}	
weathering, ageing / degradation			
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	
Wednering, ageing / aegradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Durability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	WS	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	_
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance deter	mined	

G42070PCPR 18-06-25 Version 22 3/15





Essential Characteristics	G4207OP	CPR	Harmonised technica standard
	Performance	Formstykker 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	45-145	
	Thickness tolerance	T3	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat,	Durability Characteristics	NPD {a}	
weathering, ageing / degradation			
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	
neat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Ourability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	NPD	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	-
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance deter	mined	

G42070PCPR 18-06-25 Version 22 4/15





Essential Characteristics	G4207OPCPR		Harmonised technical standard
	Performance	FrameTherm® Roll 32	Stalldald
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	90-140	
	Thickness tolerance	T2	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat, weathering, ageing / degradation	Durability Characteristics	NPD {a}	
Durability of thermal resistance against	Thermal Resistance	NPD{b}	
heat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	_
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Durability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	NPD	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance determ	nined	

G42070PCPR 18-06-25 Version 22 5/15





Essential Characteristics	G4207OPCPR		Harmonised technical standard
	Performance	FrameTherm® Slab 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	140	
	Thickness tolerance	T4	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat, weathering, ageing / degradation	Durability Characteristics	NPD {a}	
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	
neat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Ourability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	NPD	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	_
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	\dashv
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance detern	minad	

G42070PCPR 18-06-25 Version 22 6/15





Essential Characteristics	G4207OP	CPR	Harmonised technical standard
	Performance	IWI EcoBatt Slab 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	95	
	Thickness tolerance	T4	_
Reaction to Fire	Reaction to fire	A1	
Ourability of reaction to fire against heat, weathering, ageing / degradation	Durability Characteristics	NPD {a}	
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	_
fleat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Ourability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	WS	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	MU1	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance deter	mined	

G42070PCPR 18-06-25 Version 22 7/15





Essential Characteristics	G4207OP	CPR	Harmonised technical standard
	Performance	Kalzip Plus 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	90-120	
	Thickness tolerance	T1	_
Reaction to Fire	Reaction to fire	A1	
Ourability of reaction to fire against heat, weathering, ageing / degradation	Durability Characteristics	NPD {a}	
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	_
neat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Durability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	NPD	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance deterr	mined	

G42070PCPR 18-06-25 Version 22 8/15





Essential Characteristics	G4207OPCPR		Harmonised technical standard
	Performance	KI Fit 032	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	60-120	
	Thickness tolerance	T2	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat, weathering, ageing / degradation	Durability Characteristics	NPD {a}	
Durability of thermal resistance against	Thermal Resistance	NPD{b}	_
heat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Durability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	WS	_
	Long term water absorption	WL(P)	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	MU1	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	AFr10	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	AFr10	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance determ	nined	

G42070PCPR 18-06-25 Version 22 9/15





Essential Characteristics	G4207OP	CPR	Harmonised technical standard
	Performance	KI Glass Roll 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	40-150	
	Thickness tolerance	T2	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat,	Durability Characteristics	NPD {a}	
weathering, ageing / degradation			
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	
meaty weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Ourability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	NPD	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance deter	mined	

G42070PCPR 18-06-25 Version 22 10/15





Essential Characteristics	G42070P0	CPR	Harmonised technica standard
	Performance	KI Glass Slab 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	40-150	
	Thickness tolerance	T4	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat,	Durability Characteristics	NPD {a}	_
weathering, ageing / degradation			
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	
neat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Ourability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	NPD	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance detern	mined	

G42070PCPR 18-06-25 Version 22 11/15





Essential Characteristics	G42070P0	CPR	Harmonised technica standard
	Performance	Murisolering 32	Standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	40-150	
	Thickness tolerance	T3	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat,	Durability Characteristics	NPD {a}	_
weathering, ageing / degradation			
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	
weathering, agents / aegradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Durability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	WS	
	Long term water absorption	WL(P)	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	_
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance deterr	nined	

G42070PCPR 18-06-25 Version 22 12/15





Essential Characteristics	G42070Pt	G4207OPCPR	
	Performance	OmniFit® Slab 32	standard
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	90-150	
	Thickness tolerance	T4	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat,	Durability Characteristics	NPD {a}	_
weathering, ageing / degradation			
Durability of thermal resistance against heat, weathering, ageing / degradation	Thermal Resistance	NPD{b}	
neat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	
Tensile / Flexural strength	Tensile strength perpendicular faces	NPD {d}	
Durability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	NPD	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	MU1	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	_
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance deterr	mined	

G42070PCPR 18-06-25 Version 22 13/15





Essential Characteristics	G42070P0	Harmonised technical standard	
	Performance	Standard	
	{f}		
Thermal Resistance	Thermal conductivity (W/mK)	λο 0,032	EN 13162:2012 +
	Thermal Resistance	See performance chart	A1:2015
	Thickness range (mm)	75-100	
	Thickness tolerance	T2	
Reaction to Fire	Reaction to fire	A1	
Durability of reaction to fire against heat, weathering, ageing / degradation	Durability Characteristics		
Durability of thermal resistance against	Thermal Resistance	NPD{b}	
heat, weathering, ageing / degradation	Thermal conductivity	NPD	
	Durability characteristics	NPD {c}	
Compressive Strength	Compressive Stress / Compressive Strength	NPD	
	Point Load	NPD	\dashv
Tensile / Flexural strength	Tensile strength perpendicular faces		
Durability of compressive Strength against ageing / degradation	Compressive creep	NPD	
Water Permeability	Short term water absorption	NPD	
	Long term water absorption	NPD	
Water vapour permeability	Water vapour transmission, water vapour diffusion resistance factor	NPD	
Impact noise transmissions index (for	Dynamic stiffness	NPD	
floors)	Thickness	NPD	
	Compressibility	NPD	
	Air flow resistivity	NPD	
Acoustic absorptions index	Sound absorption	NPD	
Direct airborne sound insulation index	Air flow resistivity	NPD	
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD {e}	
Continuous glowing combustion	Continuous glowing combustion	NPD {e}	
	NPD - No performance determ	nined	

G42070PCPR 18-06-25 Version 22 14/15



8. Appropriate Technical Documentation and / or Specific Technical Documentation:

Not applicable

The performance of the product identified above is in conformity with the set of declared performances.

This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Thermal Resistance Table														
[mm] [m²K/W]	40 1,25	45 1,40	50 1,55	55 1,70	60 1,85	65 2,05	70 2,20	75 2,35	80 2,50	85 2,65	90 2,80	95 2,95	100 3,15	105 3,30
[mm] [m²K/W]	110 3,45	115 3,60	120 3,75	125 3,90	130 4,10	135 4,25	140 4,40	145 4,55	150 4,70					

Signed for an on behalf of the manufacturer by:

James Henderson - Plant manager (Name and function)

St. Helens - 18-06-25 (Place and date of issue)

DHah

G4207OPCPR 18-06-25 Version 22 15/15

[{]a} No change in reaction to fire properties for MW Products. The fire performance of MW does not deteriorate with time. The Euroclass classification of the product is related to the organic content, which cannot increase with time.

⁽b) Thermal conductivity of MW products does not change with time, experience has shown the fibre structure to be stable and the porosity contains no other gases than atmospheric air

[{]c} For dimensional stability thickness only

 $^{\{}d\}$ This characteristic also covers handling and installation

[{]e} European test methods are under development

⁽f) Also valid and applicable for multilayers