



**BESGRADE PRODUCTS Sdn Bhd**

**DECLARATION OF PERFORMANCE**

**NO : BG1-DOP-V1.0**

Manufacturer : Besgrade Products Sdn Bhd, Batu 10, Jalan Pokok Sena, Mukim Jabi, 06400 Alor Setar, Kedah, Malaysia.

Assessment and verification of consistency of performance (AVCP) system : **CE 2+ System**

Product description : **PLYWOOD**      Glue : **Phenol Formaldehyde**

Product type for the intended use of: **Structural plywood for floor and roof decking on joists as well as wall sheathing on studs for internal dry, internal humid, and exterior conditions**

Notify Body company : **BM TRADA**  
**Structural plywood in external conditions ( EN 636-3 ( S ) )**

Notify Body Identification number : **1224-CPD-0087**  
**Structural plywood in internal humid conditions ( EN 636-2 ( S ) )**  
**Structural plywood in internal dry conditions ( EN636-1 ( S ) )**

**Declared Performance**

Essential characteristics	Unit	Performance				Harmonised technical specification	
		9mm	12mm	18mm	25mm		
Thickness range		9mm	12mm	18mm	25mm		
Bending strength	Fm 0	N/mm <sup>2</sup>	35.20	42.44	59.08	24.56	EN310:1993
	Fm 90	N/mm <sup>2</sup>	74.71	63.74	57.21	58.59	
Bending stiffness	Fm 0	N/mm <sup>2</sup>	4650	5295	7216	5762	EN310:1993
	Fm 90	N/mm <sup>2</sup>	7257	9236	7194	7663	
Bonding quality	Class		3-ext	3-ext	3-ext	3-ext	EN314-1:1993, EN314-2:1993
Durability (swelling in thickness)	-		NPD	NPD	NPD	NPD	-
Durability (moisture resistance)	-		NPD	NPD	NPD	NPD	-
Moisture content	%		11.5	11.4	11.4	11.4	EN322:1993
Release of formaldehyde	-		E1	E1	E1	E1	EN13986 annex B
Reaction to fire	Class		D-s2,d0	D-s2,d0	D-s2,d0	D-s2,d0	EN13986 : 2004
Water vapour permeability	Wet cup		90u	90u	70u	70u	EN13986 : 2004
Water vapour permeability	Dry cup		220u	220u	200u	200u	EN13986 : 2004
Airborne sound insulation	-		NPD	NPD	NPD	NPD	EN13986 : 2004
Sound absorption	-		NPD	NPD	NPD	NPD	EN13986 : 2004
Thermal conductivity	W/(m.k)		0.17	0.17	0.13	0.13	EN13986 : 2004
Strength and stiffness for structural use	-		NPD	NPD	NPD	NPD	-
Impact resistance for structural use	-		NPD	NPD	NPD	NPD	-
Strength and stiffness under point load for structural use ( Floor )	F <sub>max</sub>	kN	2.95	3.86	7.58	8.47	EN1195 : 1998
	R <sub>0.5</sub>	N/mm <sup>2</sup>	115	101	329	239	
Strength and stiffness under point load for structural use ( Roof )	F <sub>max</sub>	kN	4.37	5.45	10.72	11.81	EN12871 : 2001
	R <sub>0.5</sub>	N/mm <sup>2</sup>	91	173	280	516	
Mechanically durability	-		NPD	NPD	NPD	NPD	-
Biological durability	-		NPD	NPD	NPD	NPD	-
Content of pentachlorophenol	-		NPD	NPD	NPD	NPD	-

EN 13986 : 2004

a For end uses in humid conditions only      F<sub>max</sub> - The 5% characteristic for maximum load  
 b For structural floor and roof decking on joists only      R<sub>0.5</sub> - The 5% characteristic for stiffness  
 Note: Values calculated on the lowest 5th percentile

The performance of the products identified is in accordance with the declared performance above  
 This declaration of performance is issued under the sole responsibility of the manufacturer identified above

Signed on behalf of the manufacturer by:   
 ( Name and Function )  
**(HOW CHIT SIM)**  
**MANAGEMENT REPRESENTATIVE**

Date : 11/7/2013



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NO : BG1-DOP-V1.0

Manufacturer : Besgrade Products Sdn Bhd, Batu 10, Jalan Pokok Sena, Mukim Jabi, 06400 Alor Setar, Kedah, Malaysia.

Assessment and verification of consistency of performance (AVCP) system : CE 4 System

Product description : PLYWOOD

Glue : Phenol Formaldehyde

Notify Body company :  
BM TRADA

Notify Body Identification number :  
1224-CPD-0087

Product type for the intended use of:

General plywood in external conditions ( EN 636-3 (G) )

General plywood in internal humid conditions ( EN 636-2 (G) )

General plywood in internal dry conditions ( EN636-1 (G) )

**Declared Performance**

Essential characteristics	Unit	Performance			Harmonised technical specification
Thickness range		3.6mm	5.5mm	15mm	EN310:1993
Bending strength	Fm 0 N/mm <sup>2</sup>	NPD	NPD	27.28	
	Fm 90 N/mm <sup>2</sup>	NPD	NPD	57.18	EN310:1993
Bending stiffness	Em 0 N/mm <sup>2</sup>	NPD	NPD	6278	
	Em 90 N/mm <sup>2</sup>	NPD	NPD	10501	EN314-1:1993, EN314-2:1993
Bonding quality	Class	3-ext	3-ext	3-ext	
Durability (swelling in thickness)	-	NPD	NPD	NPD	-
Durability (moisture resistance)	-	NPD	NPD	NPD	-
Moisture content	%	11.5	11.5	11.4	EN322:1993
Release of formaldehyde	-	E1	E1	E1	EN13986 annex B
Reaction to fire	Class	NPD	NPD	D-s2,d0	EN13986 : 2004
Water vapour permeability	Wet cup	NPD	NPD	70u	EN13986 : 2004
Water vapour permeability	Dry cup	NPD	NPD	200u	EN13986 : 2004
Airborne sound insulation	-	NPD	NPD	NPD	EN13986 : 2004
Sound absorption	-	NPD	NPD	NPD	EN13986 : 2004
Thermal conductivity	W/(m.k)	NPD	NPD	0.13	EN13986 : 2004
Strength and stiffness for structural use	-	NPD	NPD	NPD	-
Impact resistance for structural use	-	NPD	NPD	NPD	-
Strength and stiffness under point load for structural use <sup>b</sup>	-	NPD	NPD	NPD	-
Mechanically durability	-	NPD	NPD	NPD	-
Biological durability	-	NPD	NPD	NPD	-
Content of pentachlorophenol	-	NPD	NPD	NPD	-

EN 13986 : 2004

<sup>a</sup> For end uses in humid conditions only

<sup>b</sup> For structural floor and roof decking on joists only

Note: Values calculated on the lowest 5th percentile

The performance of the products identified is in accordance with the declared performance above

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