



KEMENTERIAN PEMBANGUNAN
NEGARA BRUNEI DARUSSALAM

BARANGAN YANG DILULUSKAN

Rujukan barangan yang diluluskan : (1918) KPN/ABCi/C/8.0
Tarikh dikeluarkan : 26th January 2013
Tarikh Mansuh : 26th January 2018

Dengan ini diakui bahawa, Welflex Engineering Sdn Bhd., D-6, 1st Floor, Aman Complex, Jln Aman BC3315, KM 10, Jln Muara, Bandar Seri Begawan, Negara Brunei Darussalam telah mengikuti skim persijilan barangan Kementerian Pembangunan seperti keterangan di bawah ini :-

Skim Persijilan : Scheme 2
(refer certification procedures STD3/003
Issue No. 11, Revision 27th May 2008)
: The use of these products subject to the user's
specific technical and contractual requirements

Barangan yang diluluskan : "FLAMEBAR BW11" - 2 HRS SMOKE/FIRE RATED
COATED SYSTEM FOR DUCTWORKS

Note :

- Please refer to Schedule
- Tarikh mansuh sehingga 5 tahun, jika barangan tersebut didapati tidak mengikut "Standard and Quality" maka kebenaran akan ditarik balik.

Tajuk dan Nombor Piawai (spesikasi) : ISO 9001 : 2008
yang berkenaan terhadap persijilan yang : Manufacture and Installation of fire resistant
dikehendaki. ductwork systems and penetration seals

Issued by : LPCB
(Loss Prevention Certification Board)
Certificate No. : 415
Certification Validity : No Expiry Date

D7. In 2013

[DR. HAJAH DAYANG SUZANA BINTI HAJI AWANG ADENAN]
b/p. Setiausaha Tetap (Teknikal & Professional)
Kementerian Pembangunan

Issued Date : 26/01/2013



SCHEDULE
(1918) KPN/ABCI/C/8.0
WELFLEX ENGINEERING SDN BHD.

"FLAMEBAR BW11" - 2 HRS SMOKE/FIRE RATED COATED SYSTEM FOR DUCTWORKS

Product Name	Duct Type	Condition	Type of Insulation	Insulation Thickness	Fire Resistance		LPCB Ref No.
					Integrity (min)	Insulation (min)	
Flamebar BW11	Ventilation	Fire outside duct	-	-	120	15	415a/01
			-	-	240	15	
			45kg/m ³	25mm	120	60	
			45kg/m ³	60mm	120	60	
			60kg/m ³	40mm	120	90	
			60kg/m ³	50mm	120	118	
			60kg/m ³	120mm	120	120	
			105kg/m ³	50mm	120	120	
			105kg/m ³	80mm	120	120	
			105kg/m ³	50mm	240	208	
		60kg/m ³	120mm	240	240		
		105kg/m ³	80mm	240	240		
		105kg/m ³	120mm	240	240		
		105kg/m ³	100mm**	240	240		
		Fire inside duct	-	-	120	-	
			-	-	240	-	
			45kg/m ³	25mm	120	30	
			45kg/m ³	60mm	120	30	
			60kg/m ³	50mm	120	45	
			105kg/m ³	50mm	120	60	
60kg/m ³	120mm		120	90			
105kg/m ³	80mm		120	90			
105kg/m ³	120mm		120	120			
60kg/m ³	120mm		240	90			
105kg/m ³	80mm	240	90				
105kg/m ³	120mm	240	120				
105kg/m ³	100mm**	240	120				



SCHEDULE
(1918) KPN/ABCi/C/8.0
WELFLEX ENGINEERING SDN BHD.

"FLAMEBAR BW11" - 2 HRS SMOKE/FIRE RATED COATED SYSTEM FOR DUCTWORKS

Product Name	Duct Type	Condition	Type of Insulation	Insulation Thickness	Fire Resistance		LPCB Ref. No
					Integrity (min)	Insulation (min)	
Flamebar BW11	Smoke outlet	Fire outside duct	-	-	120	15	
			-	-	240	15	
			45kg/m ³	25mm	120	60	
			45kg/m ³	60mm	120	60	
			60kg/m ³	40mm	120	90	
			60kg/m ³	50mm	120	118	
			60kg/m ³	120mm	120	120	
			105kg/m ³	50mm	120	120	
			105kg/m ³	80mm	120	120	
			105kg/m ³	50mm	240	208	
	60kg/m ³	120mm	240	240			
	105kg/m ³	80mm	240	240			
	105kg/m ³	120mm	240	240			
	105kg/m ³	100mm**	240	240			
	Smoke outlet	Fire inside duct	-	-	120	-	
			-	-	240	-	
			45kg/m ³	25mm	120	30	
			45kg/m ³	60mm	120	30	
			60kg/m ³	50mm	120	45	
			105kg/m ³	50mm	120	60	
60kg/m ³			120mm	120	90		
105kg/m ³			80mm	120	90		
105kg/m ³			120mm	120	120		
60kg/m ³			120mm	240	90		
105kg/m ³	80mm	240	90				
105kg/m ³	120mm	240	120				
105kg/m ³	100mm**	240	120				



SCHEDULE
(1918) KPN/ABCi/C/8.0
WELFLEX ENGINEERING SDN BHD.

"FLAMEBAR BW11" - 2 HRS SMOKE/FIRE RATED COATED SYSTEM FOR DUCTWORKS

Product Name	Duct Type	Condition	Type of Insulation	Insulation Thickness	Fire Resistance		LPCB Ref. No.
					Integrity (min)	Insulation (min)	
Flamebar	Kitchen extract	Fire outside duct	-	-	120	15	
			-	-	240	15	
			60kg/m ³	50mm	120	28*	
			60kg/m ³	60mm	120	30*	
			105kg/m ³	50mm	120	44*	
			60kg/m ³	120mm	120	45*	
			105kg/m ³	80mm	120	45*	
			105kg/m ³	50mm	240	44*	
			60kg/m ³	120mm	240	45*	
			105kg/m ³	80mm	240	45*	
	105kg/m ³	120mm	240	60*			
	105kg/m ³	100mm**	240	60*			
	Kitchen extract	Fire inside duct	-	-	120	-	
			-	-	240	-	
			45kg/m ³	25mm	120	30	
			45kg/m ³	60mm	120	30	
			60kg/m ³	50mm	120	45	
			105kg/m ³	50mm	120	60	
			60kg/m ³	120mm	120	90	
			105kg/m ³	80mm	120	90	
105kg/m ³			120mm	120	120		
60kg/m ³			120mm	240	90		
105kg/m ³	80mm	240	90				
105kg/m ³	120mm	240	120				
105kg/m ³	100mm**	240	120				

* Refers to internal face inside furnace.

** Includes 500mm x 25mm thick x 105kg/m³ density mineral wool collar around duct on both sides of penetration seals through fire compartment walls and floors.

Notes:

1. All ducts are protected with 0.7mm to 1.0mm nominal thickness of Flamebar BW11 Fire Proofing.
2. Maximum hanger centres are 1500mm for fire ratings up to two hours and 1000mm for fire ratings up to four hours.
3. The 50mm thick x 60kg/m³ density mineral wool insulation may be in the form of either slabs or wrap.