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*Encl.:* 1

## Test Report

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### Macroplast UK 8303 B60

Henkel KGaA  
HenkelStrasse 67  
D-40191 Düsseldorf  
Germany

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**Danish Institute of Fire and Security Technology**



The results relate only to the items tested.  
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*The present test report supersedes DIFT's test report dated 2004-02-25 under the above file number*

**1 SPONSOR**

Henkel KGaA  
HenkelStrasse 67  
D-40191 Düsseldorf  
Germany

**2 PRODUCT**

Macroplast UK 8303 B60 with hardener UK 5400.

**3 NAME OF MANUFACTURER**

The sponsor is the manufacturer.

**4 LICENSE/APPROVAL**

Not issued yet.

**5 TEST METHOD**

With reference to the Danish Institute of Fire and Security's (DIFT's) "Witnessing fabrication of test specimens" report file No. CP00312, visit conducted 2004-01-15, a test of the sampled material was carried out in accordance with annex to IMO MSC. 61(67): FTP Code, Annex 1, Part 5: "Test for surface flammability" amended by IMO MSC/Circ.1004.

Furthermore the test was carried out in accordance with the requirements of the Russian Maritime Register of Shipping, St. Petersburg, cf. Certificate of Accreditation of Testing Laboratory No. 97.002.009 valid until 16th September 2005.





## 6 SAMPLE

2004-01-19 DIFT received one bucket of Macroplast UK 8303 B60. The bucket had two individual chambers, one containing 7.7 Kg of resin, the other 1.3 Kg of hardener.

The sample was marked "CP00312/2004-01-15/TN".

DIFT prepared five test specimens by mixing the adhesive in ratio 5.9:1, and applied 250 g/m<sup>2</sup> to five non-combustible calcium silicate boards each with dimensions 795 x 153 x 10 mm and density 680 ± 50 kg/m<sup>2</sup>, c.f. annex to IMO MSC/Circ. 916.

### Material specification (stated by the sponsor)

Two component solvent free polyurethane adhesive.

Further material specification was given by the sponsor and has been filed at DIFT under the above file number.

## 7 CONDITIONING

The specimens were conditioned in accordance with IMO Res.A.653 (16).

## 8 TEST RESULTS

Date of test: 2004-02-24.

Pilot flame: Non-impinging.

The test results are shown in full detail in enclosure 1.

### Derived fire characteristics

Test No.	1	2	3	Average
CFE (kW/m <sup>2</sup> )	42.8	38.3	38.3	39.8
Q <sub>sb</sub> (MJ/m <sup>2</sup> )	1.6	1.5	1.6	1.6
Q <sub>t</sub> (MJ)	0	0	0	0
q <sub>p</sub> (kW)	0.7	1.1	1.1	1.0

CFE : Critical flux at extinguishment

Q<sub>sb</sub> : Heat for sustained burning

Q<sub>t</sub> : Total heat release

q<sub>p</sub> : Peak heat release rate



## 9 CONCLUSION

The investigated sample of Macroplast UK 8303 B60 applied with 250 g/m<sup>2</sup> (wet), fulfils the surface flammability criteria listed in IMO Resolution A.653 (16) for bulkhead, wall and ceiling linings as well as "IMO FTPC Part 5" and is therefore considered to meet the requirement for low flame spread in compliance with regulations II-2/3.8, II-2/34 and II-2/49 of the International Convention for the Safety of Life at Sea, 1974, as amended.

## 10 STATEMENT

As the Macroplast UK 8303 B60, as applied, has a total heat release ( $Q_t$ ) of not more than 0.2 MJ and a peak heat release rate ( $q_p$ ) of not more than 1.0 kW, it is considered to comply with the requirements for smoke and toxicity, set out in "IMO FTPC, Part 2" without further testing, cf. IMO Resolution MSC. 61(67), Annex 2, "Products which may be installed without testing and/or approval", § 2 "Materials not generating excessive quantities of smoke nor toxic products in fire", paragraph 2.2.

### Note


The test results relate only to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

## 11 COPY

United States Coast Guard

DIFT file No. CP00312.

  
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SURFACE FLAMMABILITY OF BULKHEAD, CEILING AND DECK FINISH MATERIALS.  
 TEST METHOD: IMO Res. A.653(16)

Material: Macroplast UK 8303 B60

Sponsor: Henkel KGaA

Amount of adhesive: 250 g/m<sup>2</sup>

Date of test: 2004-02-24

Pilot flame: Non-impinging

Test results

j [mm]	Wj [kW/m <sup>2</sup> ]	tj			tjsr		tjsd		Qj			Qjsr		Qjsd		
		1	2	3	av.	st.dev.	1	2	3	av.	st.dev.	1	2	3	av.	st.dev.
50	50.50	26	24	25	25	1	1313.0	1212.0	1262.5	1262.5	50.5					
100	49.53	30	28	28	29	1	1485.9	1386.8	1386.8	1419.9	57.2					
150	46.90	34	31	33	33	2	1594.6	1453.9	1547.7	1532.1	71.6					
200	42.75	42	37	38	39	3	1795.5	1581.7	1624.5	1667.3	113.1					
250	37.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
300	30.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350	23.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
450	13.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
500	9.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
550	6.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	4.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
650	3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
700	2.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
750	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	1	2	3	av.	st.dev.	
Ignition time	ti [s]	18.0	15.0	17.0	16.7	1.5
Heat for ignition	Qi [MJ/m <sup>2</sup> ]	1.6	1.5	1.5	1.5	0.1
Extinguishment time	te [s]	48.0	44.0	47.0	46.3	2.1
Max. flame spread distance	l [mm]	200.0	240.0	240.0	226.7	23.1
Crit.flux at exting.	CFE [kW/m <sup>2</sup> ]	42.75	38.31	38.31	39.79	2.6
Heat for sust. burning	Qsb [MJ/m <sup>2</sup> ]	1.6	1.5	1.6	1.6	0.0
Peak heat release rate	qp [kW]	0.7	1.1	1.1	1.0	0.2
Total heat release	Qt [MJ]	0.0	0.0	0.0	0.0	0.0
Heat release per unit area	Qa [MJ/m <sup>2</sup> ]	0.7	0.7	0.8	0.7	0.0

Surface flammability criteria

Bulkhead, wall and ceiling linings				Floor coverings / Prim. deck coverings			
CFE (kW/m <sup>2</sup> )	Q <sub>sb</sub> (MJ/m <sup>2</sup> )	Q <sub>t</sub> (MJ)	Q <sub>p</sub> (kW)	CFE (kW/m <sup>2</sup> )	Q <sub>sb</sub> (MJ/m <sup>2</sup> )	Q <sub>t</sub> (MJ)	Q <sub>p</sub> (kW)
≥ 20.0	≥ 1.5	≤ 0.7	≤ 4.0	≥ 7.0	≥ 0.25	≤ 2.0/1.5	≤ 10.0