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Test Certificate

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REF NoN707703/10-11 Issue 1-1
 Ord No Cash account

Date Tested 15/11/2007
 Date Reported 07/01/2008

Test Product: **TIAL-M/TIAL-MGP** sleeve installed onto test panels with **TIAL-P** primer prior to application

Specification - ASTM D4060 -07

Description of product tested

TIAL-M/TIAL-MGP heat-shrinkable wrap-around sleeve operating at temperature up to 60°C with TIAL-P wet epoxy primer.

ASTM D4060 – 07 Taber Abrasion TIAL-M/TIAL-MGP and TIAL-P Primer						
Item number	Weight of panel before (grams)	Weight of panel after (grams)	Abrasion Wheels	Load (grams)	Number of Cycles	Weight loss (grams)
1	257.52	257.50	CS10	1000	1000	0.020
2	258.11	258.08	CS10	1000	1000	0.020

The mean abrasion value was 0.020 grams per 1000 cycles

The CS10 wheels were refaced after every 250 cycles using S11 re-facing discs.

Coating Thickness TIAL-M/TIAL-MGP and TIAL-P Primer						
Item number	Maximum before (µm)	Minimum Before (µm)	Mean Before (µm)	Maximum after (µm)	Minimum After (µm)	Mean After (µm)
1	2350	1990	2110	2640	2120	2310
2	2520	2080	2340	2500	2240	2340

Test equipment used:

Taber 5130 Abraser serial number 925240 Calibration due 02/2009
 Taber CS10 abrasion wheels batch number BN03C1
 Sattorius BP3100P serial number 60804337 Calibration due 04/2008
 Elcometer 256Fs3 serial number GC898/-40 Calibration on use against reference foils.
 Elcometer reference foils serial number PC0787-795 Calibration due 07/2008

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The test specimens were conditioned for 24 hours at $23 \pm 2^{\circ}\text{C}$ and $50 \pm 5\%$ relative humidity.

The test temperature was maintained within $\pm 2^{\circ}\text{C}$ of the required temperature throughout the test.

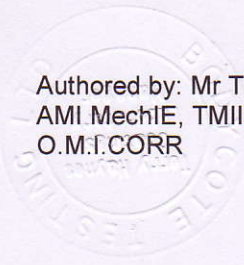
The above testing has been carried out in accordance with the requirements of the governing specification and or clients requirements, and controlled within the laboratories BS/EN/ISO/IEC 17025 UKAS accredited quality system. However, the testing is covered under the laboratories UKAS testing schedule.



John Carter
Operations Manager
Bodycote Testing Ltd
North West Laboratory.....

For and on behalf of
Bodycote Materials Testing. Ltd

Authorised by: Mr T S Haynes
AMI MechIE, TMIIE, Eng Tech
O.M.T.CORR



Witnessed by

A blue ink signature of Mr S. Davenport over a blue circular stamp that reads 'VELOSI LIMITED' and '439'.

Mr S. Davenport Inspection/Expediting Engineer
Velosi Europe Limited