

REPORT OF A MEETING OF THE FeRFA RESIN BOUND TECHNICAL COMMITTEE

DATE:	Tuesday 11 th September 2018	
AT:	Smart Marketing Works, Stone ST15 OHG	
PRESENT:	Daren Chambers	Ronacrete (Chairman)
	Mario Finelli	Aco Building Drainage
	Kate Dyas	Apollo Construction Solutions
	Andy Hinchliffe	Dural UK
	Stijn Roekaerts	Huntsman Polyurethanes (UK) Ltd
	Daniel Travis	Long Rake Spar
	David McEwan	Ronacrete
	Mike Rhodes	Ronacrete
	Kirstie Rawlinson	Star Uretech
	Mark Almond	Star Uretech
	Mathew Coath	Sureset UK
	Kevin Weston	Sureset UK
	Scott Haley	The Resin Mill
	Mark Spowage	FeRFA – The Resin Flooring Association
APOLOGIES:	Sharon Lovett	Apollo Construction Solutions
	John Harris	Derbyshire Aggregates
	Sam Buckley	Derbyshire Aggregates
	Bob Hancock	Polytech International
	David Bell	Polytech International
	Roy Usher	Geveko Markings

ACTION

1. **MINUTES OF PREVIOUS MEETING HELD 1st May 2018.**
The Minutes were confirmed as a correct record. Apologies were noted above.
2. **MATTERS ARISING**
All matters arising are included within the agenda.
3. **TECHNICAL**
 - 3.1 **TECHNICAL PERFORMANCE STANDARD**
The meeting discussed the proposed technical performance standard and the following was agreed:
 - 3.1.1 **COMPRESSIVE & FLEXURAL STRENGTH**
Compressive and flexural strength testing should be carried out in accordance with BS EN 13892-2 on samples prepared in accordance with BS EN 13892-1 (synthetic resin). A second 'control' set of specimens should be prepared allowing comparison of these physical properties before and after UV exposure. Cure times of 1 day in the mould followed by 13 days out of the mould shall be used at the storage conditions specified in BS EN 13892-1. Samples shall be prepared using the standard mix design as follows:

3.1.2 STANDARD MIX DESIGN

2 – 5 mm European Autumn Quartz	75 kg
1 – 3 mm European Autumn Quartz	25 kg
C52 silica sand	6.25 kg
Resin binder	7.50 kg

Aggregate suppliers are to provide a more detailed specification for “European Autumn Quartz” and “C52 Silica Sand”

Daniel Travis,
John Harris,
Sam Buckley

3.1.3 ABRASION RESISTANCE

The committee agreed that neither this test nor the scuffing Test TRL 176 is appropriate and will not be included in the standard.

3.1.4 SLIP RESISTANCE

Where slip/skid resistance is quoted it should be for fully formulated or specified systems and tested in accordance with the methods given in BS 8204-6. The pendulum test value (PTV) should not be less than 40 in both the wet and dry state.

3.1.5 CHEMICAL RESISTANCE

Resistance to specific fluids shall be quoted where relevant i.e. petrol, diesel, hydraulic fluid etc.

3.1.6 BEHAVIOUR AFTER ARTIFICIAL WEATHERING

It was agreed that the difference between flexural and compressive strength before and after exposure would give a good indication of how suitable a binder system is for resin bound surfacing in external applications. There was much discussion about the merits of ISO 11507 vs BS EN ISO 16474-3. However, ISO 11507 has been cancelled, replaced and revised by BS EN ISO 16474-1 and BS EN ISO 16474-3. Therefore, the specified test standard should be BS EN ISO 16474-3. The appropriate cycle was agreed as method A, cycle No 1. Exposure duration of 2000 hours was agreed by all parties.

Cycle No	Exposure period	Lamp type	Irradiance	Black-panel temperature	Relative humidity
				°C	%
1	4 h dry	UVA-340	0.83 W/m ² /nm at 340 nm	60 +/- 3	not controlled
	4 h condensation		UV radiation off	50 +/- 3	not controlled
2	5 h dry	UVA-340	0.83 W/m ² /nm at 340 nm	50 +/- 3	not controlled
	1 h water spray		UV radiation off	25 +/- 3	not controlled

At this early stage, consideration should be given to clause 7.4 of the standard “In cases where specimen thickness or low thermal conductivity does not allow condensation, use method A, cycle No. 2”. Any member taking part in the test programme is asked to comment on the appropriate method (cycle 1 or 2) before the test programme commences taking into account that the specimens will be 40 mm in thickness and porous. **Please comment promptly on receipt of these**

minutes so as not to delay the test programme.

It was also agreed that colour change of the binder should be quantified. This would involve applying a film of the binder only to a suitable substrate and measuring the colour change after exposure i.e. Delta E values according to BS EN ISO 11664-4 Colorimetry Part 4: CIE 1976 L*a*b* Colour Space. Again, any member taking part in the test programme is asked to comment on an appropriate standard dry film thickness, cure time and substrate before the test programme commences. **Please comment promptly on receipt of these minutes so as not to delay the test programme.**

**Stijn
Roekaerts,
David
McEwan ,
Kirstie
Rawlinson,
Mark
Almond,
Kate Dyas**

3.1.7 INITIAL TEST PROGRAMME

It was agreed that manufacturing members would undertake an initial test programme in order to establish minimum performance limits in terms of initial flexural and compressive strength and a minimum level of property retention after exposure. The aim is to have these results available for discussion at the next meeting which at the time of writing is 131 days hence. Given that the complete testing process will take a minimum of 98 days, the committee needs to establish the testing parameters as detailed above very quickly. Mark Spowage will coordinate responses (mark@ferfa.org.uk).

**Stijn
Roekaerts,
David
McEwan ,
Kirstie
Rawlinson,
Mark
Almond,
Kate Dyas,
Mark
Spowage**

3.1.8 RESIN CONTENT

It was agreed to remove this minimum level recommendation.

3.2 AGGREGATE SELECTION

It was agreed to incorporate the following statement into the guidance note:

Rusting

Natural aggregates may contain small amounts of iron which can produce rust staining when exposed to air and water; standard resin bound surfacing blends contain aggregates selected for infrequency of incidence of staining but iron may be present in any natural aggregate. The presence of iron cannot be identified before use and any resulting stains should not be regarded as a product defect. The performance of surfacing which exhibits rust staining will not be affected by the stains.

Mike Rhodes

3.3 CARE AND MAINTENANCE

No changes were proposed for the section on Care and Maintenance.

3.4 DETAILING

It was agreed to add a section on detailing to the guidance note. The following text is submitted for comment:

DETAILING

Sufficient time should be allowed at the tendering stage for the correct fixing operations of trims and drainage channels. Failure to carry out this operation correctly can lead to premature de-bonding or cracking of the system.

EDGING STRIPS

Aluminium edging strips may not be suitable for free edges where crushing could occur due to the malleable nature of the material. Where this may be an issue, stainless steel should be the material of choice. Consideration should also be given to perforated edging strips which allow the passage of water.

In all cases, edging strips and joint details should be securely fixed to the substrate with a suitable adhesive or by mechanical means. In the case of bituminous substrates e.g. asphalt, trims should be mechanically fixed due to the difficulty in adhesives bonding to both surfaces owing to the oily nature of the material and the movement of the substrate over time.

DRAINAGE CHANNELS

Consideration should be given to open-sided/perforated drainage channels to collect and convey rainwater percolating within the resin bound surfacing to drainage points. Standard drainage channels should not be drilled/perforated on site without the express permission and advice of the manufacture as this practice could lead to weakening of the structure.

Dural and ACO agreed to provide suitable images of trims and channels for incorporation into the guidance note and training presentation. Images of perforated drainage and trims would be informative. NOTE: Since the meeting, Andy Hinchliffe has provided the following comment:

Mario Finelli,
Andy
Hinchliffe

“Following our presentation at the Ferfa Resin Bound Technical Committee, Dural have taken on board comments that no profiles are specifically designed for your market and that non offer drainage capabilities. Ee will at the next meeting show our new drainage profiles.”

Andy has also provided images of a specially developed trim with drainage slots (attached).

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TRAINING STANDARD

A standard training presentation has been drafted by Darren Chambers (Chair) and circulated to committee members. Members have been invited to contribute good quality brand-free images for appropriate slides. All comments regarding the draft training presentation are required by the end of November so that a second draft can be circulated for comment at the next committee meeting. Ongoing points to note are:

ALL

- If possible, the training will be based on the CITB format for Short Duration training which may allow in-scope contractors to claim CITB attendance grant.
- Training will be delivered at approved training centres
- End point assessment will involve a test (multiple choice)
- Training achievement certificates to include company logo of training delivery company/organisation
- Training records to be retained by training delivery organisation
- Maximum number of learners per training session agreed at 12
- Training material will be generic. Marketing/commercial topics may be included at start or end of formal training course.
- Because FeRFA will not be delivering the training, the material cannot be branded as Ferfa training material. Ferfa have a dedicated Training Officer and it may be possible to offer this training as a one day up skilling course. The Ferfa logo will be removed from individual slides. FeRFA member companies may of course include the FeRFA logo on the marketing/commercial introduction slides.

5 **ANY OTHER BUSINESS**

5.1 **SOCIAL MEDIA**

When complete, the guidance note, performance standard and the training presentation can be promoted by FeRFA through the usual channels.

5.2 **GROUNDWORKS ENGINEERING**

Mike Rhodes suggested that the committee should seek a guest speaker who can give advice on groundwork engineering. Although resin bound surfacing is laid onto 'prepared surfaces' it would be useful to have knowledge of what can be occurring below the surface. Mike suggested Dufaylite (Clayboard) or Van Elle. Recommendations are invited from members.

ALL

6 **DATE OF NEXT MEETING**

The next meeting will take place at 10.30 am on 22nd January 2019 at Smart Marketing Works, Stone ST15 0HG

THIS CONCLUDED THE BUSINESS OF THE MEETING
