REPORT OF A MEETING OF THE FeRFA RESIN BOUND TECHNICAL COMMITTEE

DATE:	Tuesday 22nd January 2019	
AT:	Smart Marketing Works, Stone ST15 0HG	
PRESENT:	Mark Almond	Star Uretech
	David Bell	Polytech International
	Roger Brigham	Aco Building Drainage
	Daren Chambers (Chair)	Ronacrete
	Mathew Coath	Sureset
	Gary Demaine	Polytech International
	Kate Dyas	Apollo Construction Solutions
	Scott Haley	The Resin Mill
	John Harris	Derbyshire Aggregates
	Will Lewis	Geveko Markings
	Neil Luck	Aco Building Drainage
	David McEwan	Ronacrete
	Michael O'Brien	Dural UK
	Kirstie Rawlinson	Star Uretech
	Mike Rhodes	Ronacrete
	Mark Spowage	FeRFA
APOLOGIES:	Sam Buckley	Derbyshire Aggregates
	Martin Emery	Adbruf
	Mario Finelli	ACO Building Drainage
	Rob Hardes	Brett Specialized Aggregates
	Sharon Lovett	Apollo Construction Solutions
	Stijn Roekaerts	Huntsman Polyurethanes (UK)
	Ben Shave	Sureset
	Daniel Travis	Long Rake Spar
	Roy Usher	Geveko Markings
	Jason Wainwright	The Resin Mill
	Kevin Weston	Sureset UK

ACTION

1. **MINUTES OF PREVIOUS MEETING HELD 11th September 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, results from the initial testing programme and test method development.

3.1.1 **COMPRESSIVE & FLEXURAL STRENGTH BEFORE & AFTER ARTIFICIAL WEATHERING**
At the time of the meeting, both Apollo and Ronacrete had completed their initial testing. No changes to the test methods as described in the previous minutes were proposed except that reference to the irradiance power may need to be adjusted to be in-line with current test standards. A figure of 0.78 W/m^2/nm was

mentioned. The specified test standard was agreed at the previous meeting as 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

As other manufacturers are still waiting for their test results, it was agreed to defer the in-depth discussion of any results until the next meeting.

It was agreed that the guidance should include a minimum value for compressive and flexural strength before and after artificial weathering. Initial values were proposed as ≥ 5 N/mm^2 for compressive strength and ≥ 2 N/mm^2 for flexural strength although more test results are required before a final decision is made.

It was also noted that, for those test results already obtained, compressive and flexural strength increases after UV exposure by approximately the same degree. It was agreed that the standard should require that there is no significant drop-off in these two figures after exposure but "significant" is yet to be defined. Depending on the test results, the guidance may specify no drop-off in both properties after exposure.

3.1.2 **COLOUR CHANGE**

Initial test results from Apollo and Ronacrete show that there is still a slight colour change with aliphatic systems after UV exposure. This could be as much to do with heat as it is UV radiation. It was also noted that UK sites are unlikely to experience the same UV levels as the test method but the choice of aliphatic systems over aromatic systems is more about minimising any colour change rather than eliminating it altogether. It was also noted that, being on the floor, there are other factors in use that affect aesthetics other than colour change from UV light. Emphasis should be given to the initial consultation with the client where colour change should be discussed.

3.1.3 **STANDARD MIX DESIGN**

It was agreed that the standard mixed design as agreed at the last meeting should stand and that the term "European Autumn Quartz" is sufficient to identify the intended test aggregate.

It was agreed that the committee should work towards improving the guidance for specifiers with regards to aggregate selection. Aggregate requirements may be different when used for example with car parks, footpaths etc.

It was agreed that a maximum value for moisture content should be specified for the aggregates. Mike Rhodes suggested 0.05% by weight. John Harris agreed to provide specific values. — John Harris

3.1.4	**SLIP RESISTANCE** It was agreed that slip/skid resistance should be tested in accordance with the methods given in BS 8204-6 i.e. pendulum and slip-alert. This also satisfies the requirements of BS EN 14231. Guidance should include mention of the fact that slip resistance changes over time. Aggregate selection may have a bearing on this, especially PSV. The effect of cleaning on slip-resistance should also be highlighted.	Mark Spowage
3.1.5	**CHEMICAL RESISTANCE** A small section will be included in the guidance note to say "Resistance to specific fluids shall be quoted where relevant i.e. petrol, diesel, hydraulic fluid etc."	Mark Spowage
3.1.6	**ABRASION RESISTANCE** The appropriateness of the TRL 176 abrasion test was again raised and the committee agreed that it would be interesting to know how the standard aggregate blend would perform. In the interest of understanding whether the test is appropriate for the purposes of a performance standard for resin bound surfacing, Ronacrete volunteered to arrange for the testing of four or five different aggregate blends. Suggestions were Staffordshire Pink, Autumn Quartz, Pea Shingle, Granite and perhaps one other river bed aggregate. It is expected that rounder aggregates would perform worse than angular aggregates, but the results will speak for themselves. Other manufacturers are encouraged to carry out their own wear tests. Results will be discussed at the next meeting. John Harris will liaise with Ronacrete and any other manufacturer carrying out testing regarding aggregate choices.	David McEwan
4	**GUIDANCE NOTE – RESIN BOUND SURFACING FOR EXTERNAL APPLICATIONS**	
4.1	**CARE AND MAINTENANCE** Additional information will be added to the guidance note highlighting that failure to clean surfaces effectively can reduce slip resistance.	Mark Spowage
4.2	**DETAILING** Michael O'Brien (Dural) showed samples of permeable trims to the committee. Neil Luck (ACO) gave a short presentation on permeable drainage channels with a tray system that can be filled with resin bound surfacing. ACO were invited to promote their newly developed pre-drilled slotted drainage channels for resin bound surfacing through FeRFA as this would discourage contractors from drilling their own holes (8 mm) which could weaken the structure and negate any warranties on the drainage system. Generic technical drawings were requested from Dural and ACO of their permeable trims and drainage systems for inclusion in the guidance note and training material.	Neil Luck, Michael O'Brien
5	**TRAINING STANDARD** Darren Chambers again requested content from other manufacturers for the training PowerPoint presentation. So far, the presentation is based mainly on Ronacrete material with some input from Star Uretech, Sureset and Dural. In the interest of keeping the presentation non-biased and generic, contributions from other committee members is sought, especially non-branded video material.	ALL

6	**RISK MANAGEMENT MEASURES FOR HANDLING DIISOCYANATES IN THE WORKPLACE** FeRFA is a member of the PU Exchange Panel which represents industrial and professional users of diisocyanates at European level. In October 2018 this organisation published a new website which gives information on the proposed restrictions – http://safeusediisocyanates.eu/. The final draft restriction dossier was published in May and the European Commission was due to put forward a proposal before the end of 2018. The good news is that there is likely to be exemptions on restriction in the construction chemicals sector, but it will be mandatory for training to take place. Ferfa can be instrumental in delivering this training to our members. Information available so far indicates that training can be conducted in various ways, including off-site and on-site and by E-learning. Users of diisocyanates will have to document the completion of the training and check the validity once a year; Each employee will have to be trained once every four years, with the content and training duration depending on the risk of exposure; A transition period is expected of about 4 years for the development of the training material and the actual training of workers. There is a meeting of the PU Exchange Panel scheduled for 4th March. Mark Spowage will report on that meeting to this committee.	Mark Spowage
7	**DATE OF NEXT MEETING** The next meeting will take place at 10.30 am on 21st May 2019 at Smart Marketing Works, Stone ST15 0HG	

THIS CONCLUDED THE BUSINESS OF THE MEETING