BECOSAN® report wear resistance according to BCA

The test method according to BCA DIN EN 13892-4: 2002 is used there for synthetic resin screeds and resin-modified cement screeds. Three hardened steel rollers with a rolling load of 650 N run over an annular test area - for a total of 2,850 revolutions. Thereafter, the depth is measured with a measuring template and a depth meter at eight points at a distance of 45 °, compared with the depth before the test and from this the average abrasion depth in µm is calculated. This gives the wear resistance AR.

A principal advantage of this test method is that it can be used both in the laboratory and on site.

Classification of abrasion resistance and limiting depths of wear for the abrasion test:

Class	Service Conditions	Application	Max. test wear depth mm	Typical examples (see 6.2)					
				Type of concrete	Minimum compressive strength class [a] N/mm²	Minimum cement content kg/m³	Type of coarse aggregate	Type of fine aggregate	Finishing process
AR0.5 (special)/DF	Severe abrasion and impact from steel or hard plastics wheeled traffic or scoring by dragged metal objects	Very heavy duty engineering workshops and very intensively used warehouses, etc.	0.05	Specially designed proprietary concretes	Special concretes which are not classified by strength class or minimum cement content and might contain aggregates that do not conform to 5.3. Special finishing techniques may be used. The suitability of concrete flooring for this class should be established with the manufacturer or flooring contractor offering warranty				
AR1/DF	Very high abrasion; steel or hard plastics wheeled traffic and impact	Heavy duty industrial workshops, intensively used warehouses, etc.	0.1						
AR2/DF	High abrasion; steel or hard plastics wheeled traffic	Medium duty industrial and commercial	0.2	Direct finished concrete	C40/50 RC50	400	Aggregates conforming to 5.3.2	Fine aggregate conforming to 5.3.3	Power floating and repeated power trowelling as 10.7
AR4/DF	Moderate abrasion: rubber-tired traffic	Light duty industrial and commercial	0.4	Direct finished concrete	C32/40 RC40	325			

Procedure on the tested BECOSAN® sample

1 Concrete Slab Surface	B30 with very hard trowelled surface, treated with Ameripolish PCA (curing agent), with residual very thin film (several microns) to be removed before final liquid hardener-densifier treatment
2 Process	BECOSAN® resin bond diamond tools: - 100, 200 Grit - BECOSAN® Densifier - 400, 1000 Grit - BECOSAN® Protective Sealer - 3000 Grit - Buffing
3 Chemicals:	
Coverage rate acc. TDS	100-150ml per m2
BECOSAN® Densifier	100-150ml per m2
BECOSAN® Protective Sealer	Far less, because of very dense concrete surface.
Actual coverage rate	

4	**Abrasion Resistance Tests No of Points (AR Class)**	Point No 1 = AR0.5 Point No 2 = AR0.5
5	**Result Description**	The gloss is good.
6	**Concrete Base Quality Estimation**	Good trowelled concrete surface, rich gray colour.

CONCLUSION

The results and cost of **BECOSAN®** system are comparable to traditional technologies but no(!) additional investments in traditional polishing machines are required. High performance, technology is convenient for use on large projects with tight timetable.

Abrasion Resistance Class AR0,5

ROMEX, an industrial flooring company, performed on the 16/08/2018 a BCA wear resistance test according to DIN EN 13892-4: 2002 on a BECOSAN® sample, with the following results:

Date:	16/08/2018
Project:	BECOSAN® floor
Concrete slab manufacturer: ROMEX Professional Industrial Flooring	
Chemicals:	**BECOSAN® Tools + Densifier + Sealer**
Correcting date:	

Test point no.	Value before the test, mm	Value after the test, mm	Difference
1	0	0	0
2	-0,009	-0,023	-0,014
3	0,004	-0,045	-0,049
4	-0,017	-0,075	-0,058
5	-0,008	-0,051	-0,043
6	-0,016	-0,086	-0,07
7	0,014	-0,025	-0,039
8	0,002	-0,001	-0,003
		Sum	**0,276**
		Mean value	**0,0345**

CONCLUSION

A **BECOSAN®** floor is best option for heavy duty engineering workshops and very intensively used warehouses, logistic centres, etc. with severe abrasion and impact from steel or hard plastics wheeled traffic or scoring by dragged metal objects.