

Resiblock Paving Sealers

▶ B1 CHEMICAL RESISTANCE

Chemical and solvent resistance. 24 hour Spot Test on 0.1mm film of RESIBLOCK cured for 28 days at 20°C/60% RH. The following information is based on laboratory tests and to the best of our knowledge is accurate. However, it is recommended that customers satisfy themselves as to the performance under specific service conditions.

Agent	Strength %	Effect
Acetic Acid	0.5	NE
" "	5.0	SI SO SI P R
" "	10.0	M SO MP R
" "	50.0	Sev SO Sev B NR
" "	Glacial	CD
Alcohol (Ethanol)	50.0	M. SO M. P R
Ammonia	10.0	SI SO SI P R
"	20.0	M SO P R
Boric Acid	10.0	SI SO SI P R
Calcium Chloride	50.0	NE
Calcium Hydroxide	10.0	SI SO M. P R
Citric Acid	10.0	NE
" "	50.0	SI SO R
" "	70.0	SI SO P R
Ether		NE
Ferrous Sulphate	10.0	SI SO SI. P R
Formalin.....		Con SO SI P Sl. D R (1)
Glycerine	100.0	NE
Hydrochloric Acid	10.0	SI SO R
" "	18.5	M. SO SI P R
" "	37.0	Sev SO Sev B NR
Isopropanol	100.0	M. SO Sev B NR
Lactic Acid	10.0	SI SO SI P R
" "	100.0	Sev SO Sev B NR
Nitric Acid	10.0	M. SO SI P Sev D R (1)
" "	50.0	Con SO M. B Sev D R (1)
Peracetic Acid	3.0	M. SO SI P D R (1)
Perchloroethylene	100.0	SI SO R
Phosphoric Acid	2.0	M. SO SI P R

Sulphuric Acid	2.0	SI SO R
" "	10.0	SI SO R
" "	33.0	M. SO SI P R
" "	50.0	M. SO Sev B NR
Agent	Strength %	Effect
Vinyl Toluene		SI SO R
Xylene	100.0	Con SO SI P R
Acetone		CD
Aviation Fuel (AVGAS)		NE
Anti-Freeze	50.0	NE
Bleach Solution		SI SO SI D R
Brake Fluid		NE
Coca-Cola		NE
Coffee		NE
Crayon		NE
Hypoid Grease		NE
Ink		S1 D
Motor Oil		NE
Mustard		SI D
Nail Polish Remover		NE
Petrol		NE
Pine Tar Oil		M. D NR
Red Lipstick		SI D
Red Nail Varnish		D
Shoe Polish		Sev D
Tea		NE
Tide Solution		SI SO SI P R
Tobasco Sauce		SI D NR
Transmission Fluid		NE
Urine		NE
Windscreen Wash Solvent		NE
Worcestershire Sauce		SI D NR

Key:	NE	No Effect
	SI	Slight
	M	Moderate
	Con	Considerable
	Sev	Severe
	SO	Softening
	P	Pimpling
	B	Blistering
	D	Discoloration
	CD	Completely Destroyed
	R	Recovers
	NR	No Recovery (to useable film)
	(1)	Discoloration remains



B2 INFILTRATION

“REPORT ON FUEL INFILTRATION TESTS USING RESIBLOCK SEALANT ON CONCRETE BLOCK PAVING” Kent County Council, Engineering Services Laboratory.

Examiner P G Shrubsole
Date 19-23 September 1994
Checked I D Walsh

Introduction

Kent C C Engineering Services investigated the effectiveness of RESIBLOCK to inhibit the infiltration of water and a variety of fuels into concrete block paving. The test method ensured that the pavement surface as a whole, i.e. the paving blocks and the joints, was subjected to the infiltration tests.

Materials used

Concrete paving blocks	200mm x 100mm x 80mm chamfered (Greenham Concrete Products)
Bedding sand	BS6717:Pt 3:1989, Table 2 (ARC Brevmoor).
Jointing sand	BS6717:Pt 3:1989, Table 2 (ARC Brevmoor).
Infiltration liquids	a) Unleaded petrol, BS EN228 :1993
	b) Aviation fuel (AVGAS)
	c) Diesel fuel, BS EN590 :1993
	d) Water, BS 6068 :1988

Method

A test panel 600mm by 600mm was made up from blocks laid in a basket weave pattern and compacted onto the sand bedding to achieve 30mm thickness of bedding. The joints were filled with jointing sand and the panel compacted with a vibrating plate compactor.

The RESIBLOCK was applied, according to published recommendations.

For each test liquid a glass permeameter (140mm ID by 100mm high) was fixed to the block paving over the joints of three adjacent blocks. The permeameter was fixed to the paving with epoxy putty and silicon RTV rubber, ensuring a complete seal. The inside edge of the sealant was cut away to ensure the correct test area.

A 0.5 litre sample of liquid was used for each test, which is equivalent to an initial head of 35mm. This height was considered appropriate and is more severe than is likely to occur during spillage on a service station forecourt.

Test liquid	Infiltration rate ml/second	Max permitted infiltration rate ml/second*	Remarks
Unleaded petrol	<0.020	0.02	excellent
AVGAS	<0.020	0.02	excellent
Diesel fuel	<0.020	0.02	excellent
Water	0.022	0.05	excellent

*Recommendations by University of Newcastle work for British Aerospace Military Aircraft Ltd.

Conclusions

The application of RESIBLOCK ensures that a concrete block pavement, laid in accordance with BS 6717 - Part III satisfies the maximum specified infiltration rate recommended by University of Newcastle following their study for British Aerospace Military Aircraft Ltd.



B3 SKID RESISTANCE

Introduction

The application of any sealant/coating to block paving may effect the skid/slip resistance of the pavement. Therefore the effect of skid resistance was to be investigated.

Method

To measure the effect of the application of RESIBLOCK '22' on the skid resistance of concrete pavers, a portable pendulum friction tester was used. The test results are shown in this table.

Surface Tested	Pendulum Test Result
Concrete pavers - unsealed	75
Concrete pavers - RESIBLOCK sealed	56

Conclusions

These results indicate an initial reduction for concrete block paving of only 25% after the application of RESIBLOCK.

However even this reduction is only temporary, as thereafter weathering and abrasion by foot and vehicular traffic rapidly re-introduces the fine surface grip of concrete block paving surface as the RESIBLOCK is abraded. With clay pavers the SRV can actually increase after sealing.

The SRV values obtained show that after the application of RESIBLOCK, the pavers are satisfactory for vehicular or pedestrian traffic slip resistance.



B4 ASTM/BS TESTING

Comprehensive laboratory testing was carried out to find out the tensile strength and elongation of both RESIBLOCK SUPERIOR and RESIBLOCK '22'. A modified test method BS2782 Part 3 Method 320A rather than ASTM D2370 was used, as it was felt that the BS tests were somewhat more rigorous and hence the resultant data was more meaningful.

The main difference between the two tests being the size of the test specimen.

	TENSILE STRENGTH (mPa)	ELONGATION (%)
RESIBLOCK SUPERIOR	15.3	328
RESIBLOCK '22'	7.1	407

In both cases the products showed excellent tensile strength, but what is more important showed exceptional elongation characteristics. At the time when this document was published the highest known elongation requirement called for in any specification was 100%.



B5 PROPERTIES OF RESIBLOCK

TYPICAL LIQUID PROPERTIES

VISCOSITY (25oC)	Poise	<50 CPS (12-25)
SPECIFIC GRAVITY (25oC)		0.80 - 0.93
SOLIDS CONTENT (%)		18-22 ('22')
APPEARANCE		Liquid
COLOUR (GARDENER)		Light (or Pale) off white to amber
STABILITY IN DARK (20oC)	Months	18
NCO (%)		1.4 max
FREE ISOCYANATE MONOMER* (%)		<0.4

*Determination of Free Monometric IDI, HPC Journal of Chromatography No. 152 (1978) by Bagon and Hardy.

TYPICAL DEVELOPMENT OF CURED FILM PROPERTIES

Dry film thickness of 0.1mm, cured at 20oC/60% RH.

TACK FREE	Hours	1.5
HARD	"	2.0
SWARD HARDNESS	1 Hour	Tacky
" "	2 "	10
" "	4 "	16
" "	1 Day	44
" "	3 "	50
" "	1 Week	54

After One Month at 20oC/60% RH

FLEXIBILITY. Aluminium mandrel bend (3.2mm dia.) - PASS

ADHESION. Scotch Tape - Aluminium substrate. Loss of adhesion - NIL

RESULTS OF FLORIDA EXPOSURE TESTS

Two coats sprayed onto an Aluminium substrate and exposed for 6 months

GENERAL APPEARANCE	No change
CHECKING	" "
CRACKING	" "
FLAKING	" "
EROSION	" "
COLOUR	Slight Yellowing
GLOSS	No change
WATER SPOTTING	" "
DIRT	Slight
MILDEW	No change

ABRASION RESISTANCE

Concrete substrates that are particularly liable to abrasion, such as factory and warehouse floors, spillways aprons and

carriageways, will benefit greatly from a coating of RESIBLOCK over conventional types of surface hardener. Abrasion tests on different concrete mixes have given the following test results.

Water/cement ratio of concrete mix	Depth of abrasion (mm) C & CA Abrasion Machine (5 min cycle)		
	Control - No surface treatment*	2 coats 20% Sodium Silicate solution*	2 coats RESIBLOCK
0.65	1.18	0.89	0.14
0.52	0.78	0.51	0.14
0.44	0.54	0.40	0.14