

RECIEMUL (C60B5 REC)

DEFINITION:

Slow setting cationic bituminous emulsion for cold in plant or in place recycling mixtures, corresponding to C60B5 REC type emulsion according to standard EN 13808:2013.

SPECIFICATIONS:

Particle polarity Breaking value (Forshammer filler) Breaking value (Forshammer filler) Brinder content	Characteristics	Units	Standard	Min.	Max.
Breaking value (Forshammer filler) - EN 13075-1 170 - Binder content % EN 1428 58 62 Efflux time (2 mm, 40 °C) (*) Settling tendency (7 days storage) % EN 12846-1 15 70 Settling tendency (7 days storage) % EN 12847 - 10 Residue on sieving (0,5 mm sieve) % EN 1429 - 0,10 Water effect on binder adhesion % EN 13614 90 - Residual binder (**) EN 1431 Penetration (25 °C) O,1 mm EN 1426 - 220 Softening Point °C EN 13074-1 Penetration (25 °C) O,1 mm EN 1426 - 220 Softening Point °C EN 1427 35 - Stabilised binder (**) EN 13704-2 Penetration (25 °C) O,1 mm EN 1426 - 150	Properties of the emulsion				
Sinder content % EN 1428 58 62	Particle polarity	-	EN 1430 Positive		
### Efflux time (2 mm, 40 °C) (*) Settling tendency (7 days storage) Residue on sieving (0,5 mm sieve) Water effect on binder adhesion Water effect on binder adhesion Residual binder (**) Penetration (25 °C) Softening Point Softening Point Penetration (25 °C) Softening Point Softening Point Penetration (25 °C) Softening P	Breaking value (Forshammer filler)	-	EN 13075-1	170	-
Settling tendency (7 days storage) % EN 12847 - 10 Residue on sieving (0,5 mm sieve) % EN 1429 - 0,10 Water effect on binder adhesion % EN 13614 90 - Residual binder (**) EN 1431 - - Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 13074-1 - - - Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 1427 35 - Stabilised binder (**) EN 13704-2 Penetration (25 °C) 0,1 mm EN 1426 - 150	Binder content	%	EN 1428	58	62
Residue on sieving (0,5 mm sieve) %	Efflux time (2 mm, 40 °C) (*)	s	EN 12846-1	15	70
Water effect on binder adhesion % EN 13614 90 - Residual binder (**) EN 1431 - 220 Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 13074-1 - - - Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 1427 35 - Stabilised binder (**) EN 13704-2 Penetration (25 °C) 0,1 mm EN 1426 - 150	Settling tendency (7 days storage)	%	EN 12847	-	10
Residual binder (**) EN 1431 Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 1427 35 - Recovered binder (**) EN 13074-1 - 220 Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 1427 35 - Stabilised binder (**) EN 13704-2 - 150 Penetration (25 °C) 0,1 mm EN 1426 - 150	Residue on sieving (0,5 mm sieve)	%	EN 1429	-	0,10
Penetration (25 °C) Softening Point °C EN 1426 EN 1427 Softening Point Penetration (25 °C) O,1 mm EN 1426 EN 13074-1 Penetration (25 °C) O,1 mm EN 1426 EN 1427 Softening Point °C EN 1427 Softening Point °C EN 1427 Softening Point C EN 13704-2 Penetration (25 °C) O,1 mm EN 1426 - 150	Water effect on binder adhesion	%	EN 13614	90	-
Softening Point °C EN 1427 35 - Recovered binder (**) EN 13074-1 - 220 Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 1427 35 - Stabilised binder (**) EN 13704-2 Penetration (25 °C) 0,1 mm EN 1426 - 150	Residual binder (**)		EN 1431		
Recovered binder (**) EN 13074-1 Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 1427 35 - Stabilised binder (**) EN 13704-2 - 150 Penetration (25 °C) 0,1 mm EN 1426 - 150	Penetration (25 °C)	0,1 mm	EN 1426	-	220
Penetration (25 °C) 0,1 mm EN 1426 - 220 Softening Point °C EN 1427 35 - Stabilised binder (**) EN 13704-2 Penetration (25 °C) 0,1 mm EN 1426 - 150	Softening Point	°C	EN 1427	35	-
Softening Point °C EN 1427 35 - Stabilised binder (**) EN 13704-2 Penetration (25 °C) 0,1 mm EN 1426 - 150	Recovered binder (**)		EN 13074-1		
Stabilised binder (**) EN 13704-2 Penetration (25 °C) 0,1 mm EN 1426 - 150	Penetration (25 °C)	0,1 mm	EN 1426	-	220
Penetration (25 °C)	Softening Point	°C	EN 1427	35	_
	Stabilised binder (**)		EN 13704-2		
Softening Point °C EN 1427 35 -	Penetration (25 °C)	0,1 mm	EN 1426		150
	Softening Point	°C	EN 1427	35	-

^(*) Efflux time between 40 – 130 s is allowed depending on the characteristics of the materials to be used.

^(**) If the emulsion is going to be used in hot areas or under intense traffic conditions, harder bitumen can be used. In such case, the residual binder penetration will be ≤150 and the softening point ≥39.





APPLICATIONS:

- → Cold recycling with emulsion for binder or base courses.
- → Cold in place or in plant recycling.

RECOMMENDED WORKING TEMPERATURES

→ Application temperature (°C): 10-40. Regularly, the emulsion will be used at the supply temperature which will always be less than 50°C. It is not recommended heating the emulsion for this application because a high temperature will cause a stability reduction during the coating of the material to be recycled which leads to an early breakage in the fabrication of the mixture.

RECOMMENDED DOSAGE:

- → It depends on the type of treatment, the characteristics of the reclaimed asphalt and the aggregates, the final mixture, the position of the layer on the base surface and the traffic category.
- → For more than 90% RAP approximately around 2.5 to 5.0% of emulsion over the total mass (RAP plus new aggregates).
- → Between 50-90% RAP approximately around 4.0 to 6.0% of emulsion over the total mass (RAP plus new aggregates).
- → For less than 50% RAP approximately around 6.0 to 8.0% of emulsion over the total mass (RAP plus new aggregates).

GENERAL RECOMMENDATIONS:

- → Given its composition, this type of emulsion should be transported in full cisterns or at least filled up to 90% of its capacity, always at temperatures below 60°C to avoid any partial breakages during transport.
- → If these emulsions are going to be stored for more than 7 days, it is recommended to homogenize prior to their use.
- → The appropriate equipment must be used to reach the emulsion's proper dosage and the rest of the components of the recycled mixture.



Revision nº1 - Approved: 10/11/2022 - Next revision: 10/11/2027