

# MasterSeal CR 170

(new improved formulation, replaces MASTERFLEX 700 FR gun grade)

**2-component joint sealant, non-sagging, polysulphide-based, chemical resistant, with European Technical Approval**

## DESCRIPTION

MasterSeal CR 170 is a non-sagging chemical-resistant two-component polysulphide based joint sealant with hardening system based on manganese oxide.

## FIELD OF APPLICATION

MasterSeal CR 170 is used for sealing wall joints and inclined floor joints between foot access and traffic areas (inclination from 2 %), especially where an effective seal against potentially water-polluting substances is needed, for example in refuelling areas at filling stations and for other sealed areas.

Contact your local Master Builders Solutions representative regarding any application required not mentioned here.

## FEATURES AND BENEFITS

- elastic, up to 30% overall deformation admissible
- free of chlorinated paraffins
- approved for its use in facilities of storage, handling and filling of substances hazardous to water by DIBt (Deutsches Institut für Bautechnik)
- resistant to fuels, oils and a large number of other chemicals (see chemical and substance resistance lists in European Technical Approval)
- available in black and grey

## APPLICATION METHOD

### (a) Surface Preparation

All substrates (new and old) must be structurally sound, free of laitance and loose particles and clean of oil, grease, rubber skid marks, paint stains and other adhesion impairing contaminants.

The temperature of the contact surfaces must be at least 3 °C above the ambient dew point temperature.

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13 DE0200/01	
<b>ETA-12/0485</b> Joint sealing system <b>MasterSeal CR 170</b>	
Reaction to fire	Class E
Admissible contact material	Concrete, fibre concrete, polymer-concrete on UP resin base, stainless steel, CD-coated steel
Admissible extension, compression and shear distances	Admissible deformation distances according to Annex 7 of the ETA
Admissible levels of road serviceability	t0 (trafficable with pedestrians) t1 (trafficable with pneumatic tyres)
Resistance to media	Resistance to media in accordance with Annex 2 and 3 of the ETA

### (b) Backer rod

Prevent any three point bonding and ensure the recommended sealant depth by using a closed-cell backer rod. For flat joints prevent three point bonding by the use of a bond breaking tape.

Install the backer rod by compressing and rolling it into the joint channel without stretching it lengthwise.

Avoid puncture of the backer rod during installation.

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To achieve a smooth, clearly defined joint, mask the joint edges with self-adhesive tape before caulking. Remove the tape immediately after the joint surface is smoothened.

## (c) Primer coat

MasterSeal CR 170 must always be applied to primed surfaces.

Primer selection:

- MasterSeal P 117: for absorbent substrates (e.g. concrete, cementitious mortars, etc.)
- MasterSeal P 107: for non-absorbent substrates and stainless steel
- MasterSeal P 127: for mild steel substrates

Allow primer to flash off before sealant application and apply MasterSeal CR 170 within the open time of the primer.

Do not prime or puncture the backer-rod.

Please note:

Primers do only help to improve the adhesion but are not a substitute for correct substrate preparation or will improve the strength of it significantly.

For further details please refer to the corresponding technical data sheet of the MasterSeal P Primers.

## (d) Mixing

### Processing of 450-ml cartridge

#### Tools

- Cartridge holder
- Cartridge stirrer (spiral, size fitting the inside diameter of the cartridge)
- Adjustable stirrer (for a speed of about 300 rpm)
- 0.6-l cartridge gun with plunger

#### Mixing and filling the gun:

Place the cartridge in the holder and clamp it firmly in position. The bottom of the cartridge must be firmly seated on the bottom of the holder. (Otherwise, the bottom of the

cartridge could be pressed out during the mixing process.) Insert the stirrer into the cartridge rotating it as you do so, mix the components and rotate the stirrer as you remove it from the cartridge. Parts A and B (separated by a separation paste inside the cartridge) must be mixed for at least two minutes. When closing the gun, make sure that the front edge of the cartridge forms a tight seal against the gun nozzle. Depending on the design of the cartridge gun, it may be necessary to use an additional seal in order to prevent fouling of the gun barrel as the sealant is dispensed.

#### Processing of 2.5-l cans

##### Tools:

- Can holder
- Mixing paddle
- Suction nozzle with handle
- Adjustable stirrer (for a speed of about 300 rpm)
- Application gun with suction piston (Guns with a capacity of 0.6 – 1.5 l with the appropriate suction nozzle may be used.)

#### Mixing and filling the application gun:

Clamp the can into the can holder.

Part A and B (supplied in a single can, separated by a separating paste) must be thoroughly mixed with each other for at least three minutes. Mixing must continue until a homogeneous sealant without any sludge has been produced.

Insert the suction nozzle into the can, attach the application gun to the suction nozzle and fill the material into the gun by suction.

## (e) Application

In order to obtain a clean, smooth edge on the seal, the edges or bevels of the joint must be covered by masking tape before the primer or sealant is applied.

The primed sides of the joint must be absolutely dry before the sealant is inserted and the primer must be

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allowed to cure for the specified time. Make sure that joint is filled from the bottom up to the top edge, continuously without any bubbles.

For wider joints, it is recommended to apply the sealant in layers, starting from the sides of the seal string. Finally, the remaining cross section of the joint must be filled. The joint edge must not be used as an adhesion surface. When application has been completed, smooth the seal surface using a trowel and remove the masking tape.

If necessary, the seal surface may be smoothed using a soft brush with a smoothing agent such as a neutral soap solution.

The ambient temperature and the temperature of the structure to be sealed are crucially important for application and curing. At low temperatures, chemical reactions proceed more slowly; open times and curing times will therefore be longer. At higher temperatures, chemical reactions are faster and the times will be shorter. In order to ensure full curing, the material and structure temperatures must not be lower than the minimum limit at any location or at any point during the curing time.

## APPROVALS

MasterSeal CR 170 has been tested in accordance with the approval principles of DIBt for seal systems in facilities for the storage, filling and handling of potentially water-polluting liquids. The following approval has been obtained:

– ETA-12/0485

## FINISHING AND CLEANING

Tools can be cleaned from fresh material with a solvent cleaner or cleaning agent like MasterSeal Cleaner G. Once dry/cured they can only be cleaned mechanically.

## COVERAGE

The consumption depends on the size of the joint.

Width joint (mm)	Depth joint (mm)	Consumption ml/m
10	10	100
15	12-15	180-225
20	16-20	320-400
25	20-25	500-625
30	24-30	720-900
35	28-35	980-1225
40	32-40	1280-1600

This consumption is theoretical and depends in particular on the evenness of the joint. In special cases a calculation based on in-situ tests might be required.

## COLORS

Grey and black

## PACKAGING

MasterSeal CR 170 is available in 450 ml cartridges and 2.5 L cans.

## STORAGE

Tightly closed containers may be stored in a dry area at temperatures between +15 and 25 °C.

## SHELF LIFE

9 months in unopened original containers, if stored at above mentioned storage conditions.

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## WATCH POINTS

- MasterSeal CR 170 is only for industrial use.
- MasterSeal CR 170 is not suitable for continuous exposure to water.
- Best sealing practice is when joints are at the midpoint of their designed width. In case of sealing in different conditions consider additional movement of joints and evaluate the elastic performances of product.

Specific safety information referring the handling and transport of this product can be found in the Material Safety Data Sheet. For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

Disposal of product and its container should be carried out according to the local legislation in force. Responsibility for this lies with the final owner of the product.

## HANDLING AND TRANSPORT

Usual preventive measures for the handling of chemical products should be observed when using this product, for example do not eat, smoke or drink while working and wash hands when taking a break or when the job is completed.

Product Data			
Property	Method	Unit	Data
Mixing ratio A:B	-	by weight	100 : 9
Density	-	g/ml	1.65
Solid material content	-	-	100 %
Viscosity	-		thixotropic
Open time	-	min	30 - 120
Curing time	-	h	24 - 48
Application temperature	-	° C	5 - 40
Shore A hardness	ISO 7619-1		approx. 25
Tensile stress for 120% elongation	EN 28340	N/mm <sup>2</sup>	approx. 0.40 (at + 20 °C)
			approx. 0.74 (at -20° C)
Recovery capacity	EN 27389	%	approx. 80
Max. admissible overall deformation	-	%	30
Service temperature (without chemical exposure)	-	°C	-20 to +60

**Note:** Values are measured at 23°C ± 2°C and 50% ± 10% relative humidity. Higher temperatures and/or higher R.H. can shorten these times, and vice versa. Technical data shown are statistical results and do not correspond to guaranteed minima.

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Chemical Resistance					
Media	Conc.	Resistance	Media	Conc.	Resistance
<b>Inorganic acids</b>					
boric acid	sat.	+	hydrochloric acid	10%	(+)
hydrofluoric acid	10%	(+)	hydrochloric acid	conc.	-
phosphoric acid	10%	+	sulphuric acid	25%	(+)
phosphoric acid	25%	(+)	sulphuric acid	40%	-
nitric acid	10%	+			
<b>Oils</b>					
bio fuel		++	castor oil		++
drilling oil		++	silicone oil		++
brake oil		+	skydrol		++
fuel oil		++	tar oil		+
hydraulic oil		+	terpentine oil		+
<b>Organic acids</b>					
formic acid	5%	+	lactic acid	40%	+
formic acid	10%	(+)	lactic acid	conc.	(+)
formic acid	98%	-	oleic acid	50%	(+)
benzoic acid	sat.	+	oxalic acid	10%	+
succinic acid	20%	+	oxalic acid	sat.	(+)
acetic acid	10%	(+)	wine acid	15%	+
acetic acid	60%	-	citric acid	20%	+
maleic acid	20%	+			
<b>Alkaline solutions</b>					
alcoholic caustic soda	10%	+	potassium hydroxide	20%	++
ammonia	25%	++	caustic soda	10%	++
calcium hydroxide	sat.	++			

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Media	Conc.	Resistance	Media	Conc.	Resistance
<b>Salt solutions</b>					
aluminium chloride	35%	+	potassium dichromate	20%	+
ammonium nitrate	40%	+	potassium nitrate	40%	+
ammonium phosphate	40%	+	potassium permanganate	2%	+
ammonium sulphate	40%	+	copper sulphate	25%	+
barium chloride	40%	+	sodium acetate	sat.	+
barium sulphate	40%	+	sodium carbonate	sat.	+
calcium chloride	40%	+	sodium chloride	sat.	+
calcium nitrate	40%	+	sodium nitrate	sat.	+
ferrous sulphate	40%	+	sodium phosphate primary	10%	+
potassium carbonate	15%	+			
<b>Organic solvents</b>					
petrol, normal & super		++	xylene		+
benzene		(+)	perchloroethylene		(+)
jet fuel, IP4		++	dichlorobenzene		+
petroleum		++	dimethylaniline		+
styrene		-	dimethylformamide		(+)
white spirit		++	trichloroethylene		(+)
toluene		+	carbon tetra chloride		-
<b>Aldehyde</b>					
benzaldehyde		-	formaldehyde	35%	-
crotonaldehyde		-	cinnamic aldehyde		(+)

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Chemical Resistance					
Media	Conc.	Resistance	Media	Conc.	Resistance
<b>Alcohols</b>					
benzyl alcohol		(+)	isobutanol		++
ethyl alcohol	50%	++	isopropanol		++
ethyl alcohol	96%	+	cresol	5%	(+)
ethylene glycol		++	methyl alcohol		+
furfuryl alcohol		+	phenol	5%	+
glycerine		++	phenol	sat.	(+)
<b>Ketone</b>					
acetone		+	methylethyl ketone		+
acetophenone		+	methylisobutyl ketone		+
cyclohexanone		(+)			
<b>Ester</b>					
butylacetate		+	methylglycol acetate		+
ethylacetate		+			
<b>Others</b>					
distilled water		+	hydrogen peroxide		+
whey		++			

+ resistant without any changes

- non-resistant

(+) resistant, but with changes (slight swelling). Only for occasional contact or splashing mode, with periodical cleaning.

#### Disclaimer:

In view of widely varying site conditions and fields of application of our products, this technical data sheet is meant to provide general application guidelines only. This information is based on our present knowledge and experience. The customer is not released from the obligation to conduct careful testing of suitability and possible application for the intended use. The customer is obliged to contact the technical help-line for fields of application not expressly stated in the technical data sheet under "Fields of Application". Use of the product beyond the fields of application as stated in the technical data sheet without previous consultation with BASF and possible resulting damages are in the sole responsibility of the customer.

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