LIGHTWEIGHT CONCRETE TECHNOLOGY AND APPLICATION

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BUILDING TRUST

AREA OF APPLICATION

As a lightweight, low-viscous filling material for:

- Building as thermal insulating layer

  (Measuring indicative thermal conductivity test in **BS 874 part 3.2**)

- Shutdown sewerage.

- Fill blocks, spaces around pipes, ……..etc.

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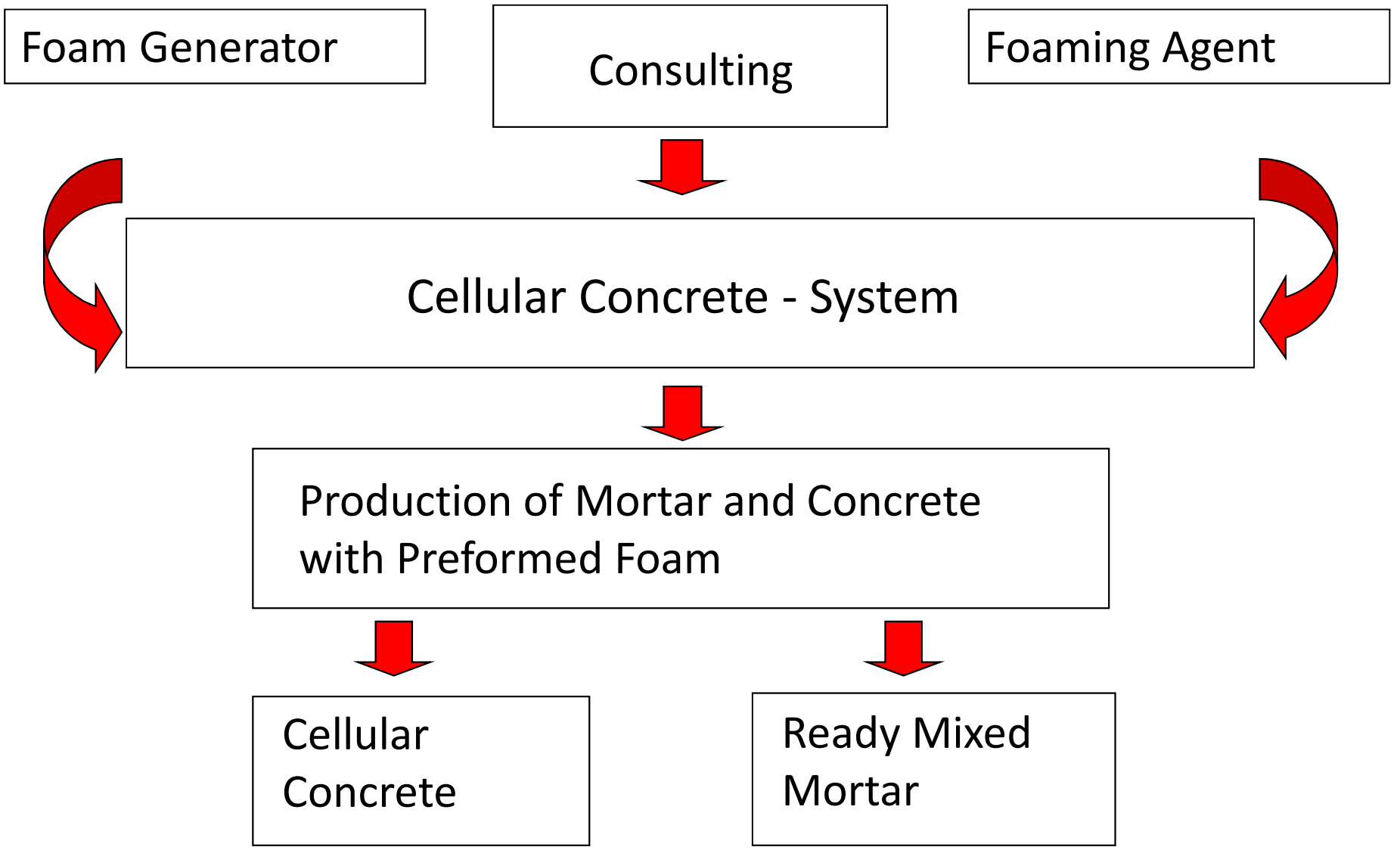
Cellular Concrete System



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Lighter than water!

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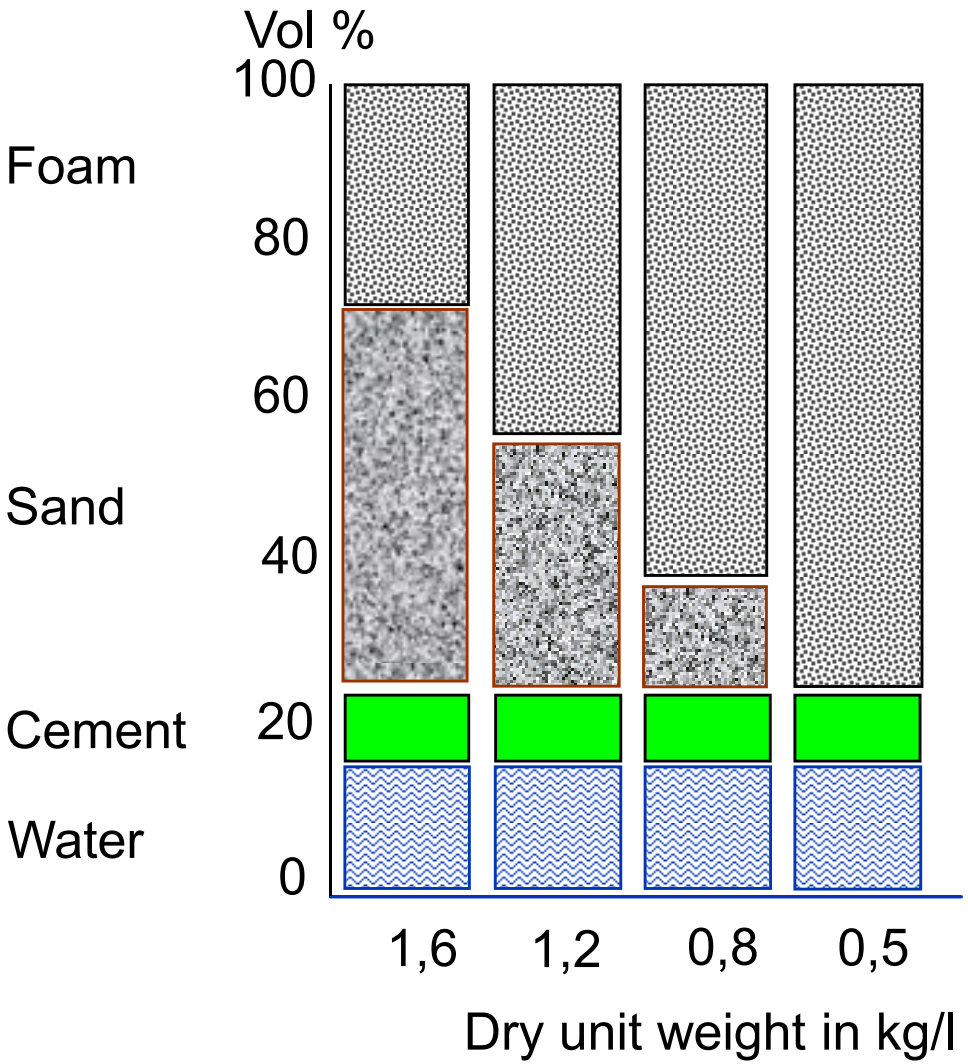
Composition of Cellular Concrete



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Cellular Concrete - Properties

Fresh Concrete	Hardened Concrete
▪ flowable ▪ pumpable ▪ easy workability ▪ no compaction necessary	▪ Adjustable in unit weight and strength ▪ durable and stable in shape ▪ Thermal insulating ▪ higher resistance to fire ▪ increased shrinkage ▪ not decomposable

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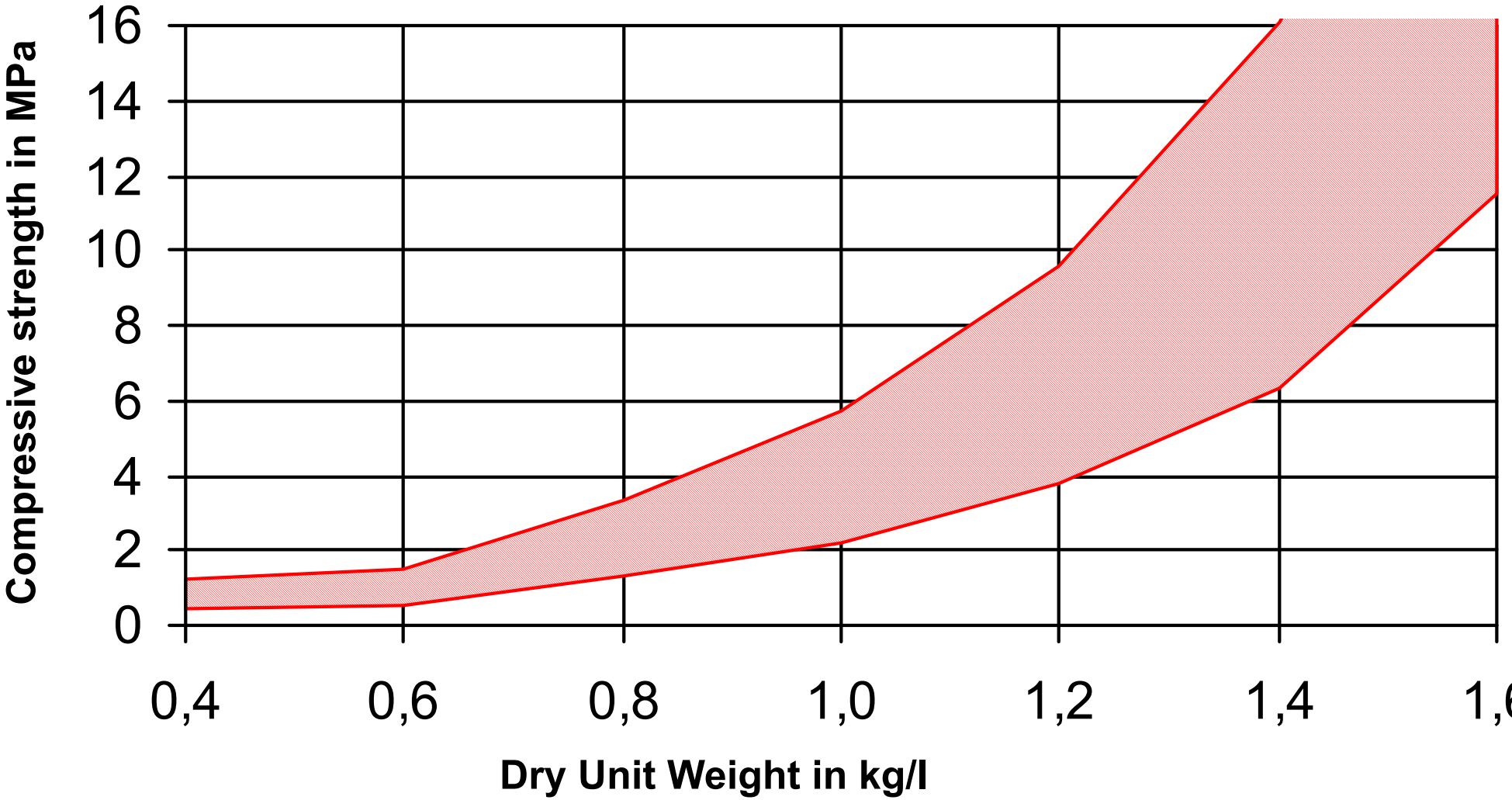
Compressive Strength of Cellular Concrete Depending on Dry Unit Weight



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Components of Cellular Concrete

Type	Usual Materials
cement	CEM I 32,5 R CEM I 42,5 R
filler	limestone flour fly ash
aggregates	sand 0 – 2 mm 0 – 4 mm
foam agent	SB 2 - Organic tenside
stabilizer	ST 3 - powder, (methyl cellulose)

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Mix Design of Cellular Concrete

Cement content	**300 - 350 kg/m³**
Water content	**150** l/m³ with foam generator SG 70 **180** l/m³ with foam generator SG S 9
Foam unit weight	**0,03 – 0,06** kg/l with foam generator SG 70 **0,03 – 0,05** kg/l with foam generator SG S 9

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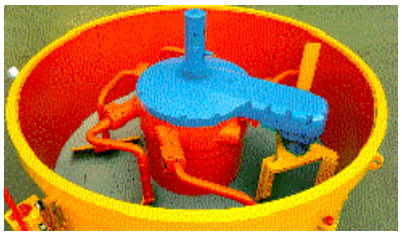
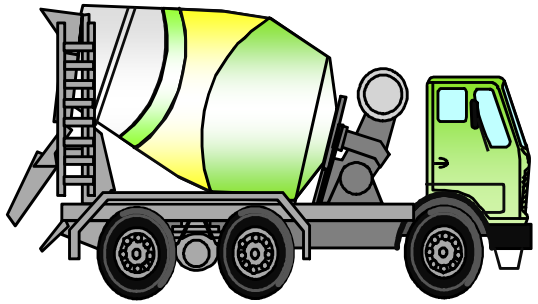
Production on the Site

Concrete mixing plant

sand
cement water

(compulsory mixer)



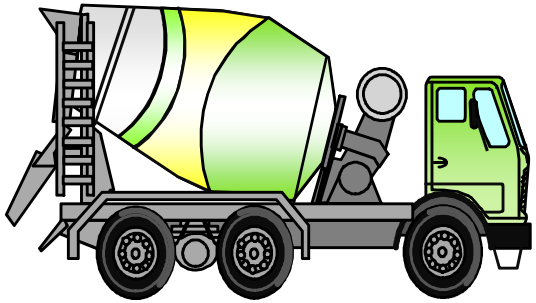


On the site with foam generator SG 70

foam agent
SB 2

water

Foam production with foam generator SG 70



FOAM AGENT SB2

FOAM AGENT FOR THE PRODUCTION OF POROUS LIGHTWEIGHT CONCRETE BY FOAMING METHOD

Technical Data

Colour and state :	blue-green liquid
Density (20°C):	1.04 g/cm³
Chloride content:	< 0.1 %
Recommended dosage:	150 – 230 g / 100 l foam

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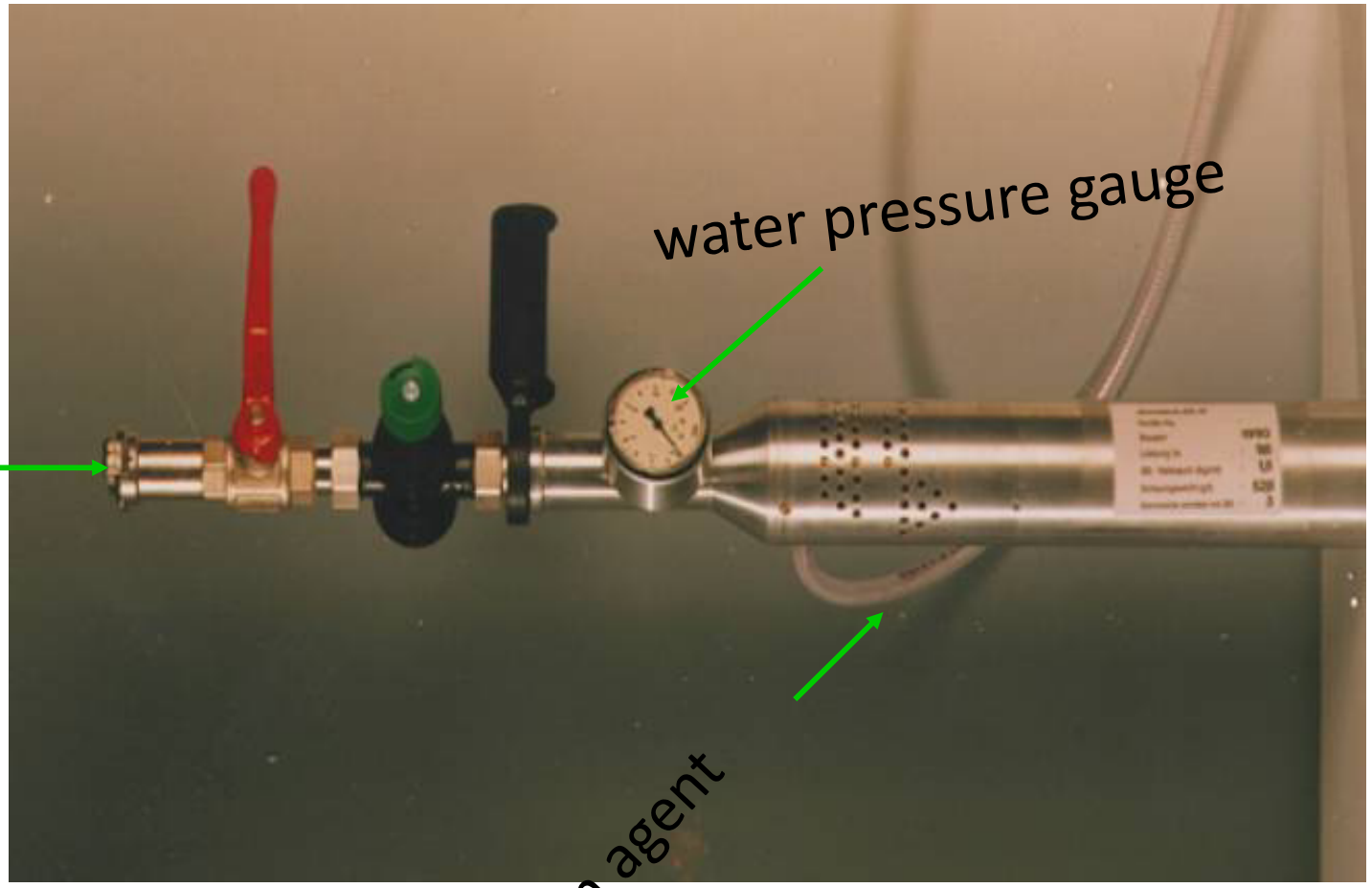
Foam Generator SG 70



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Foam production with SGS 9

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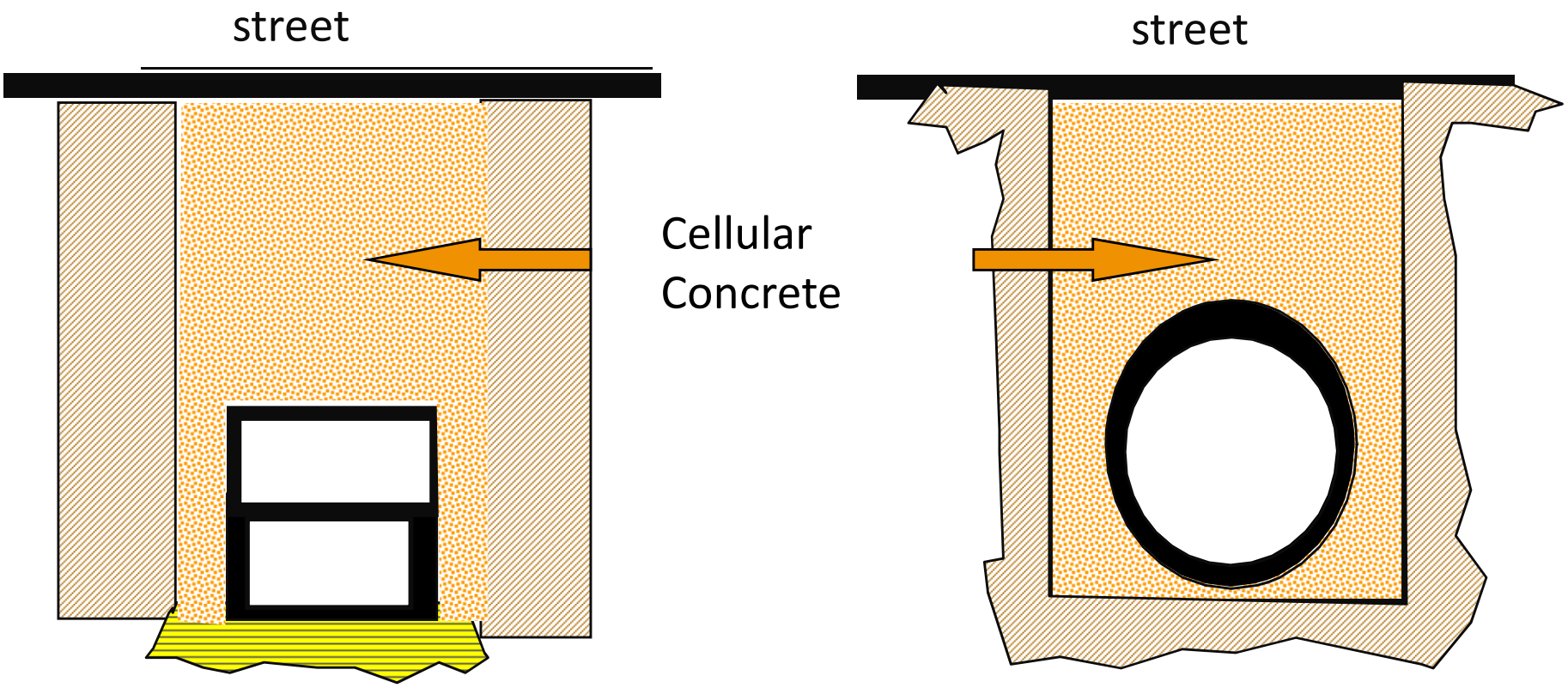
Applications: Re-Filling of Trenches and Excavations



- filling of working spaces at the side of pipes
- avoiding consolidation settlement

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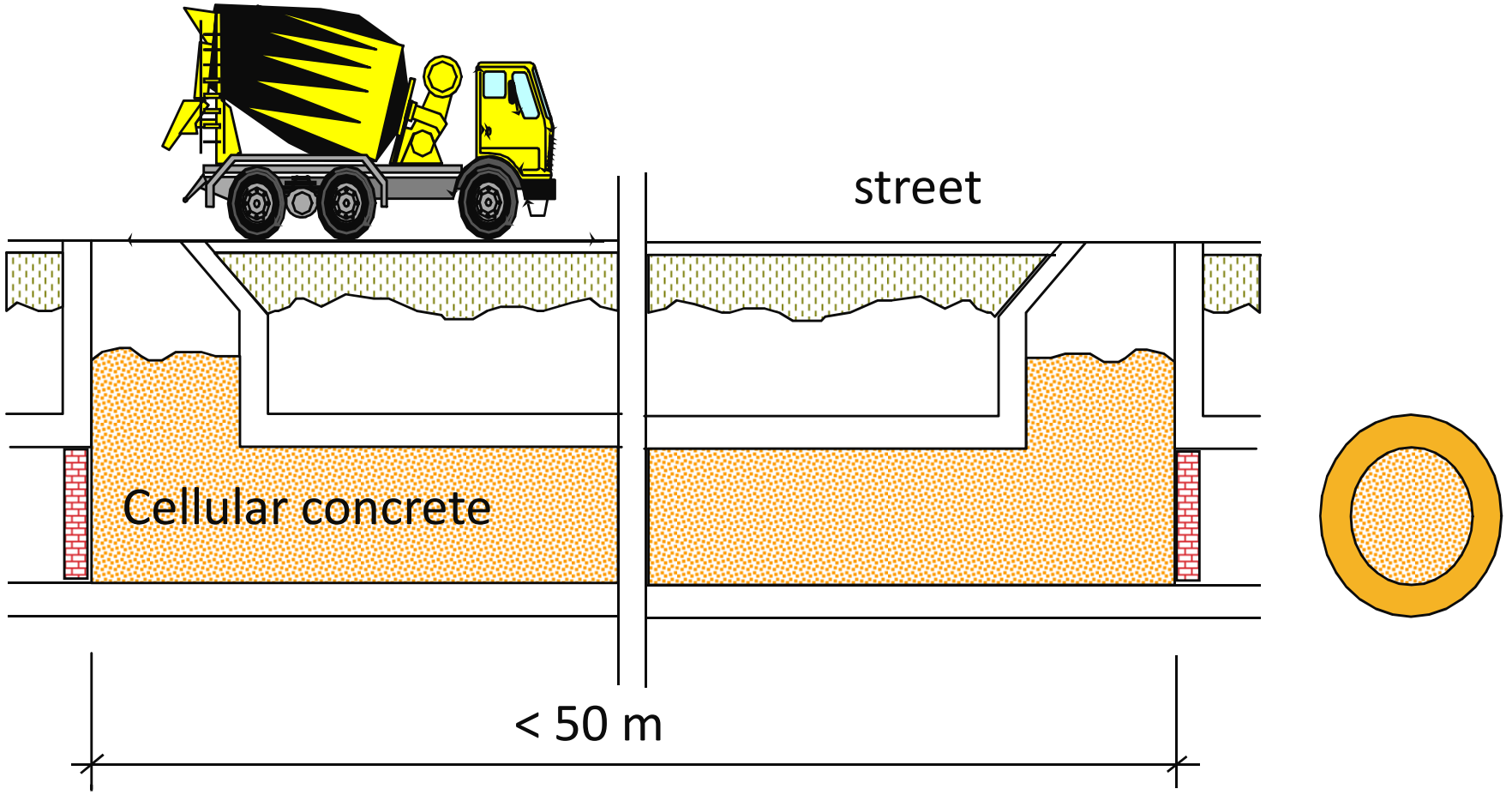
Applications: Filling of Sewage Pipes



- Pouring directly in the shaft
- Complete filling of the cross-section

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Applications: Cellular Concrete below Basement Slab

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Applications: Filling between Floor Timbers

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Applications: Roof Surface with Cellular Concrete as levelling layer