

D400 FRAME BEDDING INSTRUCTIONS



BEDDING BEST PRACTICES

- Wear all personal safety equipment and follow all safety instructions on job site**



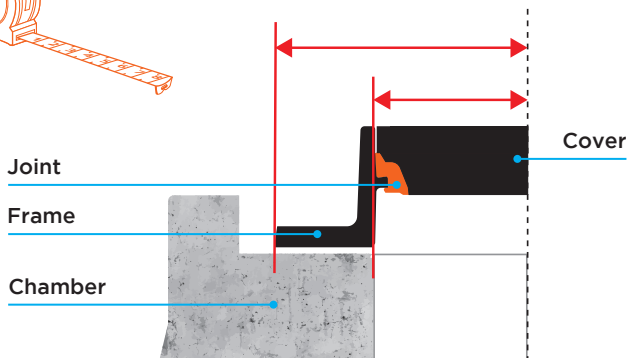
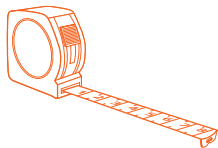
- Use appropriate tools**
- Control dimensional fit between frame and chamber head**
- Read and follow PAM's instructions**
- Read and follow instructions for bedding mortar**
- Utilise specified product mix, use clean and correct temperature water**
- Clean any operational parts of the manhole cover, keeping installation area clear**
- Allow bedding mortar sufficient time to set, before reopening to traffic**
- Consider jobsite's cleanliness, collect and discard all debris, packaging and waste**

IMPORTANT NOTICE

- This document provides contractors with advice and recommendations useful for the bedding of PAM ironwork. These recommendations are indicative only and should not prevent contractors from adopting bedding practices according to site conditions. Contractors remain exclusively responsible for their job and for the full adherence to safety instructions during bedding operations.
- This document does not address either the installation of “self levelling” frames, nor the use of flowable mortars for the bedding of tradition ironwork. Dedicated documents for this will be issued at a later date.

DIMENSIONAL MATCHING

- 1** Check that internal and external dimensions of the top of the chamber comply with those of the frame to be embedded, so that it is fully supported/seated.



2 The frame must be completely supported by the top of the chamber, without any cantilever.

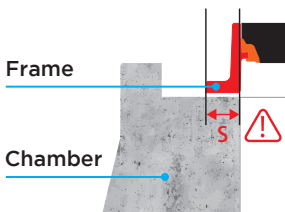


If needed, **increase** the bearing surface of the chamber by widening (internally or externally) the concrete wall to make sure that a dimensional match with the frame is fully achieved.

Note: The use of concrete spare rings to achieve this dimensional matching is solution that can be considered.

3

Some frames feature reduced “S” bearing surfaces, (e.g. frames having an 785mm outside diameter) which as a consequence increases the frame bearing pressure applied on the top of the chamber. **In this case, mortars or concrete with a 50 MPa-resistance to compression as a minimum must be used.** The field of application of such frames may be restricted to low traffic conditions only.



FITNESS OF THE TOP OF THE CHAMBER FOR BEDDING

- 4** Verify that the top of the chamber surface is free of loose particles, clean this surface with any appropriate tool.

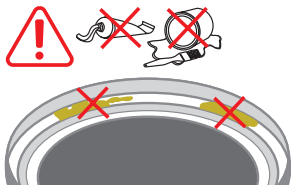


Remove any dust, debris, earth, brush or air-spray the surface then humidify the bearing surface.

Note: some bedding mortars require a dry bearing surface, please consult the manufacturer's instruction sheet.



Avoid any traces of oil, grease or lubricant on the top of the chamber surface and on the frame to be embedded.

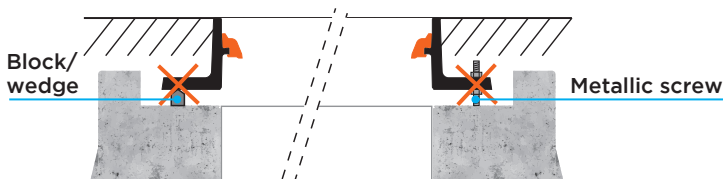


HANDLING OF FRAME AND COVER

- 5** Do not throw frames or covers from a truck, do not roll the cover on the ground.



- 6** Do not use any (metal or wooden) brackets, stones or any metallic wedges or threaded spindles to adjust the height of the frame.

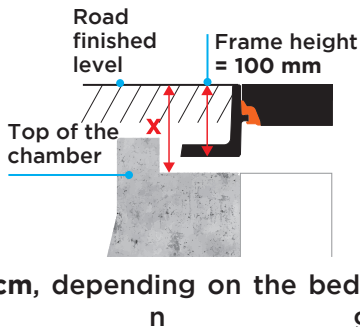


These devices may apply excessive local stresses on the frame under traffic conditions.

Note: the use of spacers such as plastic screws is only permitted when bedding mortar is liquid, not set, as these device are not designed to support the frame long-term.

FRAME BEDDING

- 7** For a 100mm-deep frame, check that the height interval **x** left between the road level and the top of the chamber surface stretches from 14 up to 18 cm, depending on the bedding material used. See n°8.



In case of a 75mm-deep frame, use exclusively a mortar with a 50 MPa-resistance to compression. See n°8 and manufacturer's instruction sheet.

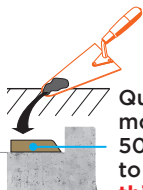
- 8** Apply a first layer of bedding material, recommended thicknesses:

- Class CP 325 or 500 concrete: **8 cm**
- Quick setting mortars with 30 or 50 MPa-resistance to compression: **4 cm**

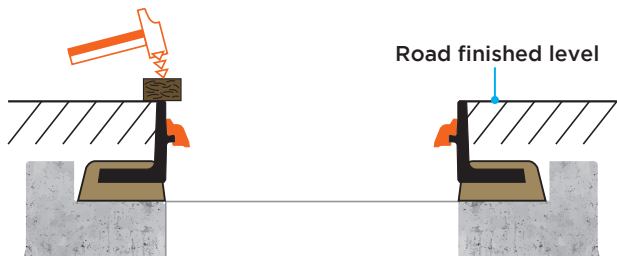
Class CP 325
or 500 concrete:
thickness 8 cm



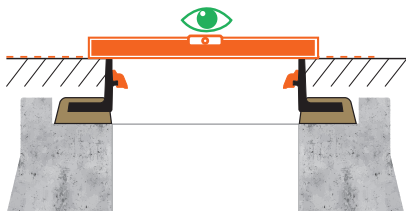
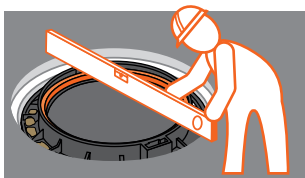
Quick setting
mortars with 30 or
50 MPa-resistance
to compression:
thickness 4 cm



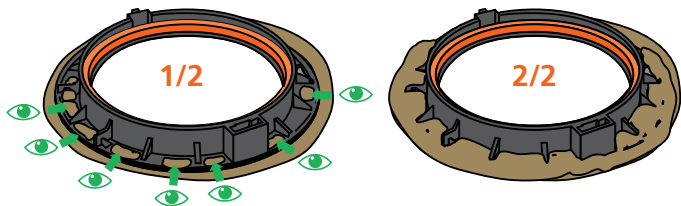
- 9 Lay the frame, well-centered and horizontal, directly on the bedding material, gently hammering (using also a wooden block) the frame to make it progressively sink into the bedding material.



- 10 If the frame sinks too deeply into the bedding material, remove the frame, add another layer of bedding material, and proceed again according to n°8 and n°9.



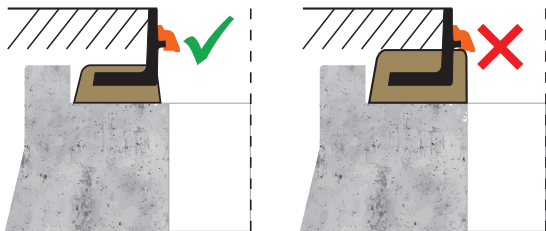
- 11** Check that the bedding mortar has entirely filled the frame slots.



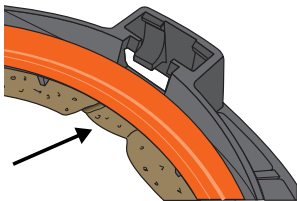
- 12** Lay a second layer of bedding product, trowelled or finished, but keep a to 3 to 5 cm space free to allow the further laying of asphalt up to the road level.

FINISH AND CONTROL

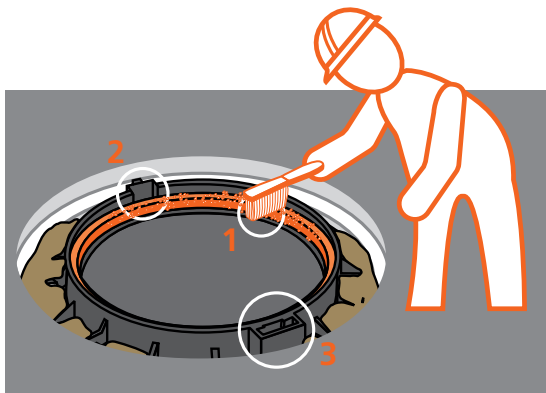
- 13** Check and make sure that the bedding product is never in contact with the joint, allow space under the joint for further change if necessary.



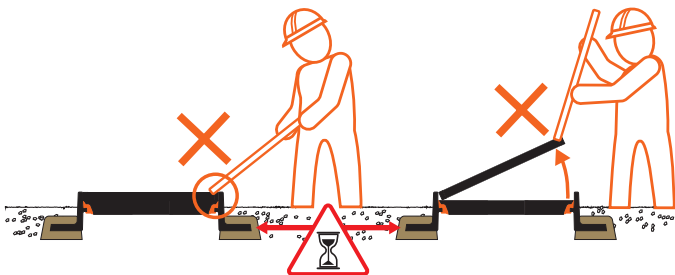
- 14** When specified for some frames, manually **shape** a trough in fresh bedding product underneath the hinge box, to facilitate its further cleaning.



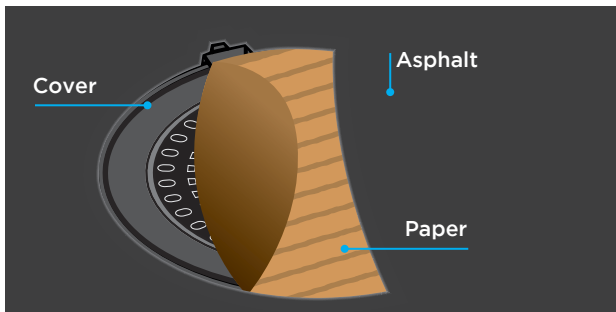
- 15** Remove and clean any traces of bedding product on joint, on hinge and locking areas.



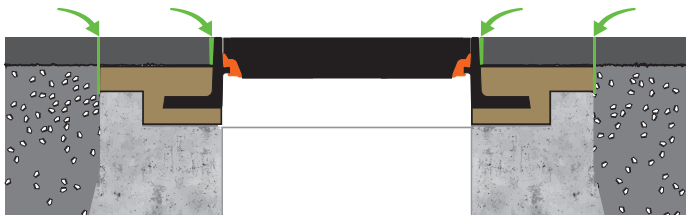
- 16** During the mortar setting time, just lay the cover on the frame to safely close the chamber hole, but don't install, hinge, close or lock the cover into the frame until the bedding mortar has completely set.



- 17** Prior to asphalt laying on road, protect the cover with a sheet of craft paper or a fine layer of sand. This will prevent asphalt from penetrating into hinge & opening boxes, and from filling the chequer plate and raised studs surface.



18 To ensure water-tightness, use appropriate emulsion or use expanding protection tape between the road and the bedding material, and between the top of frame and the road.



PRECAUTIONS ON NON-FINISHED WORK

In order to avoid any potential damage to bedded frames and covers, **avoid any vehicle rolling on them,** until the asphalt layer has been applied up to the final level.

