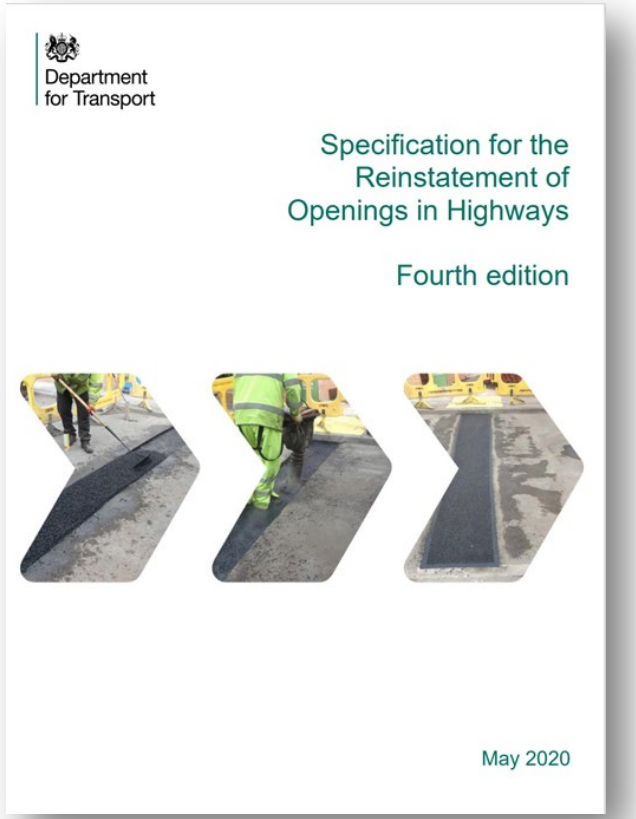
S4 – Surround to Apparatus



Researched, compiled and produced by corehard and ENFIELD Council with support through TFL lane rental funding scheme

Introduction- SROH S4

This advisory document is designed to assist incoming and existing Inspectors as support and refresher material. It will be provided in simple language to aid in understanding and avoiding technical or descriptive explanation.

The current edition (Ed 4) of the Specification for Reinstatement of Openings in the Highway (SROH) has been updated to assist readers in understanding, and introduce new methods and developments within street-works.

Remember, the SROH applies to works undertaken on carriageway's, footway's and verge's maintained at public expense (not private roads or land).

You will now be taken through the key items within S4 which will enable you to have a better understanding of what should happen when monitoring surround to apparatus

Please note:
This presentation is simply to aid in understanding of the SROH and should not be used for any other purpose. The simplicity of language may detract from certain technical or descriptive requirements and, therefore, the SROH should be consulted for clarity.

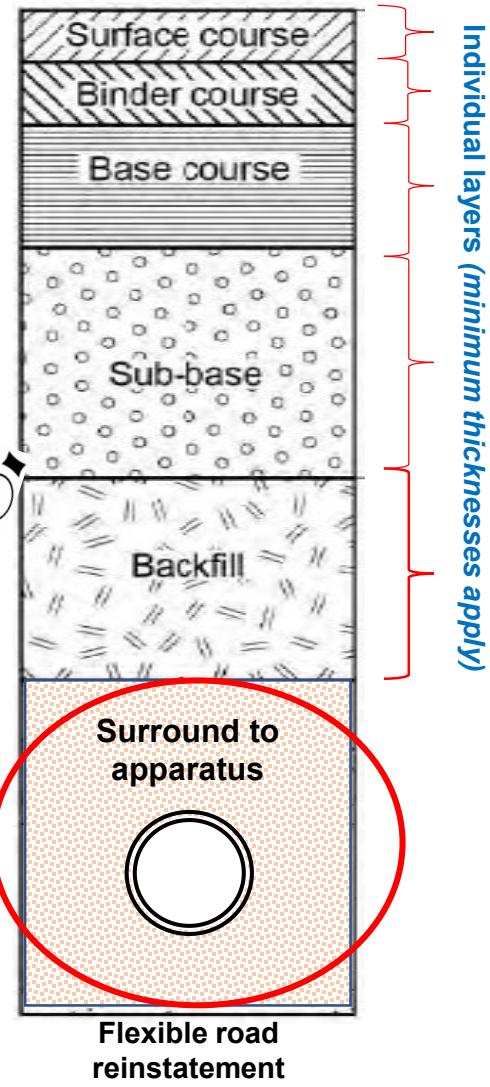
S4 Surround to Apparatus

S4 General

S4.1.1 Surround to apparatus may be laid to a maximum thickness of 250 mm above the crown of the apparatus. The surround to apparatus must not intrude into the road structure. It may be necessary for the undertaker to lay apparatus deeper to avoid this.
S4.1.2 Laying and compaction procedures used for all materials laid as surround to apparatus are the responsibility of the undertaker.
S4.1.3 Selecting materials for the surround to apparatus is the responsibility of the undertaker.

What it means

If a duct, pipe, cable or any other type of apparatus is being laid, the surround to apparatus material should not exceed 250mm above it (e.g. if pea shingle is being used for the surround to apparatus it should never be more than 250mm above the pipe duct or cable). Some fine-fill materials like sand or similar may require careful compaction around and above the apparatus, which is the responsibility of the undertaker or his contractors to make sure it is done correctly. The undertaker has a choice of materials he can use as surround but it should never be a class E material.



For a description of Class E – Unacceptable Materials. Please refer to the next slide.

HBM's (Hydraulically Bound Materials) may be used as surround to apparatus. Also, materials that have been approved under trials as outlined in SROH – A.9.

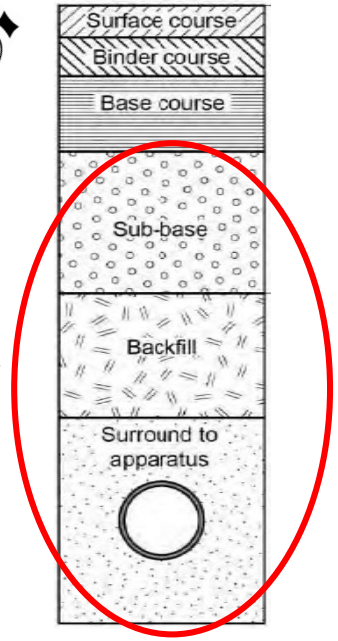
S4 Surround to Apparatus

Materials not suitable for use as any part of the reinstatement are known as:
Class E – Unacceptable Materials.
These are defined within SROH - A1.5 and are usually comprised of peat, organic matters from marshes or bogs, logs and perishable items, along with flammable materials or chemically contaminated substances.

PLEASE NOTE

As already stated on previous slide Hydraulically Bound Materials (HBM's) may be used as surround to apparatus. This is also the case for materials approved under SROH-A9 which have been trialled and accepted. Protection plates, warning tapes or warning tiles may be placed within or above the surround to apparatus as the undertaker sees fit.

HINT
If a HBM or approved A9 material is used, the Backfill and Sub-Base layer's may be the same material type provided they meet the individual layer thickness requirements of the SROH.



Excavated materials + Hydraulic binders + Water = HBM's (Cores taken from cured material)

S4 - Summary

What is the maximum that surround to apparatus can be placed above apparatus?

The surround to apparatus can only be laid to a maximum of 250mm above the apparatus and should not interfere which any part of the road structural layers.

Why are Class E materials unacceptable for surround to apparatus

As mentioned previously, Class E materials cannot be used in any part of the reinstatement as they may cause it to fail. This is why materials like peat or other organic materials cannot be used as they may rot and cause construction to break down.

Is pea shingle a good surround to apparatus?

Many undertakers use pea shingle as it can usually flow and fill voids around and under the apparatus. However, it must be ensured it fills the voids completely as it may move after reinstatement and cause it to sink.

Can you explain what HBM materials are?

Hydraulically Bound Materials (HBM's) are usually made from excavated materials not normally suitable for use. However, when mixed with certain binder additives and certified, they can be used within certain layers of a reinstatement.