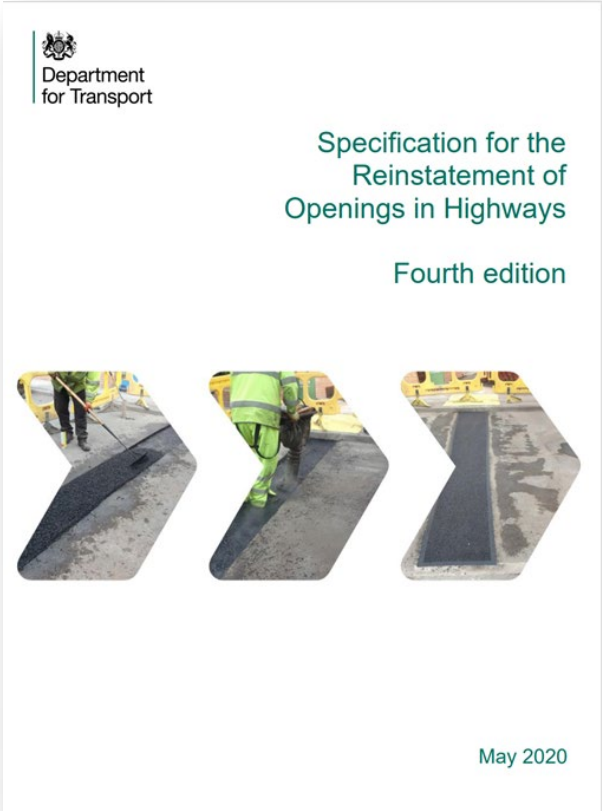


# Appendix A6 – Modular Roads



Researched, compiled and produced by



and



with support through TFL lane rental funding scheme

## Introduction- SROH Appendix 6

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 Appendix A6 which will enable you to have a better understanding of what to look for when monitoring reinstatement in modular roads.



**Please note:**

This document is simply to aid in understanding of the Specification for the Reinstatement of Openings in the Highway (SROH) and should not be used for any other purpose. The simplicity of language is to assist in explanation, but may detract from certain technical or descriptive specification requirements and, therefore, the SROH should be consulted for clarity.

# Appendix A6 – Modular Roads

## A reminder of reinstatement methods

Table A2.10 Key to reinstatement methods

Reinstatement method (at first visit)	Flexible & composite roads		Rigid & modular roads				Footways, footpaths & cycle tracks				
	S6		S7						S8		
	Flexible (A3.0 - A3.4 incl.)	Composite (A4.0 - A4.3 incl.)	Rigid (A5.0 - A5.2 incl.)	Modular			Flexible and composite (A7.1 and A7.2)	Rigid (A7.3)	Modular (A7.4)		
			Bituminous base (roadbase) (A6.1)	Composite base (roadbase) (A6.2)	Granular base (roadbase) (A6.3)						
All permanent	Method A (Types 0-4 incl.)	Method A (Types 0-4 incl.)	Method A (Types 0-4 incl.)	Method A (Types 3, 4 only)	Method A (Types 3, 4 only)	Method A (Types 3, 4 only)	Method A	Method A	Method A		
Interim with permanent binder course	Method B (Types 0-4 incl.)	Method B (Types 0-4 incl.)	N/A	N/A	N/A	N/A	Method B	N/A	N/A		
Interim with permanent base	Method C (Types 3, 4 incl.)	Method C (Types 0-4 incl.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Interim with permanent sub-base	Method D (Types 0-4 incl.)	Method D (Types 0-4 incl.)	Method D (Types 0-4 incl.)	Method D (Types 3, 4 only)	Method D (Types 3, 4 only)	Method D (Types 3, 4 only)	Method D	Method D	Method D		
Permanent incorporating interim surface overlay	N/A	N/A	Method E (Types 0-4 incl.)	N/A	N/A	N/A	N/A	N/A	N/A		

The reinstatement methods you can employ for modular roads is shown in Table A2.10 of the SROH. As you can see outlined in red, only methods A and D apply to Types 3 and 4 roads only.

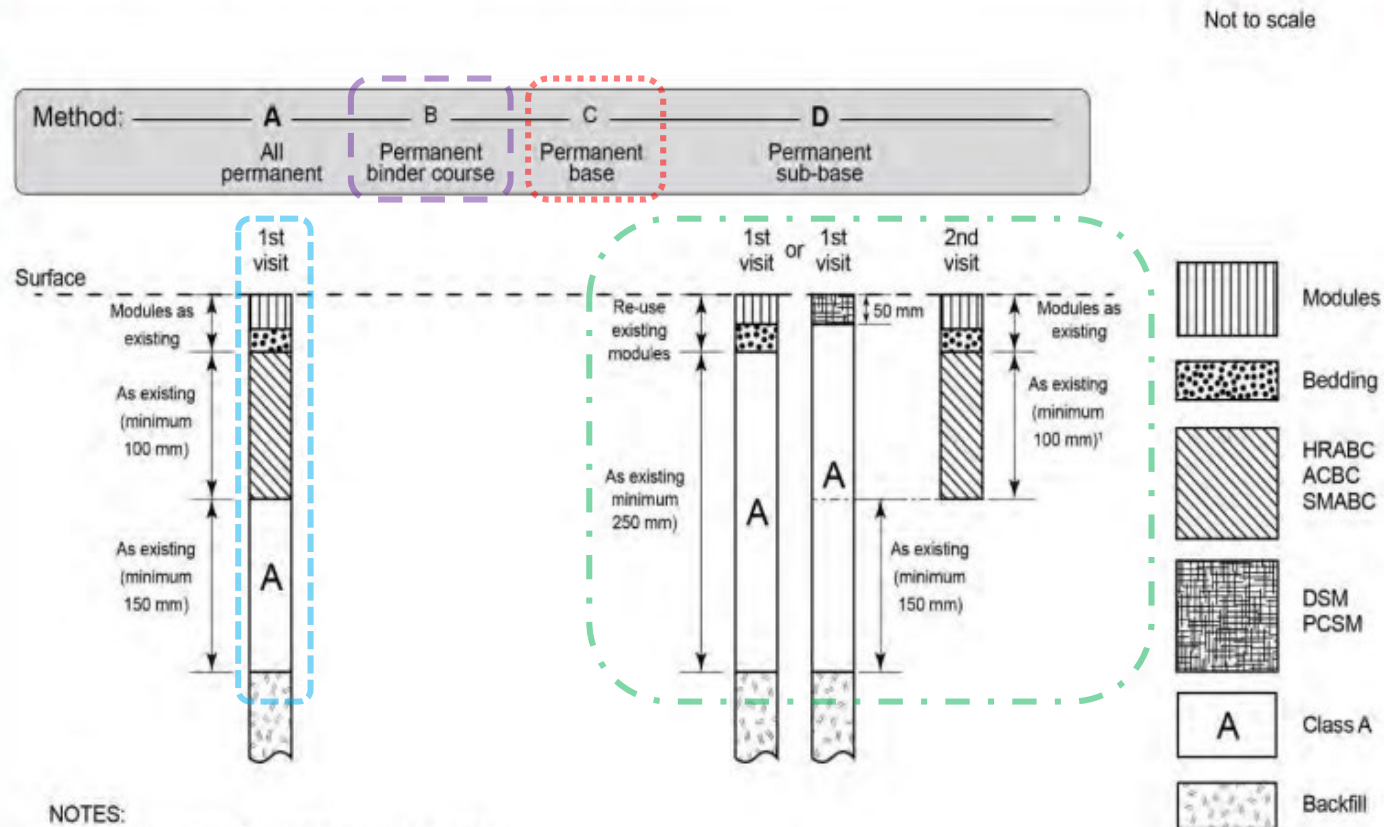
What you will notice in composite roads construction is that they differ at base layer in terms of construction. You have three options in base layer construction that will determine layer thickness values as will be seen in following pages. Firstly, you will see bituminous base option, then a composite base option, and finally a granular base option. Each of these will have different requirements in terms of layer thickness values.

For example, if you use the bituminous base option, the next page will show Method A as requiring to match the exiting materials, subject to a minimum of 100 mm bituminous laid over a minimum 150 mm of class A material. Please refer to the following pages to understand the options and layer values required.

# Appendix A6 – Modular Roads

Figure A6.1 – Modular Roads (bituminous base) Types 3 & 4

Figure A6.1 Modular roads (bituminous base) types 3 and 4



NOTES:

- 1) May be permanently reinstated on the first visit;
- 2) For alternative reinstatement materials refer to A9;
- 3) In small openings and narrow trenches CBGM base may be used as sub-base. Thickness must be 150 mm and the base must be bound.

You can see why **Method A** is preferred with a bituminous base layer to match existing, or minimum 100 mm whichever is the greater.

**Method B** Does not apply in modular road construction

**Method C** also will not apply in modular roads.

**Method D** is where you have laid a permanent sub-base layer and will return to extract the interim materials above it. The first visit will incorporate class A materials to match existing (or minimum 250mm layer thickness, whichever is greater) and bed in re-used modules. Or it may simply apply a class A material below an interim 50mm layer of bituminous. The second visit will introduce a bituminous base layer to match existing thickness (or 100mm minimum, whichever is greater) and then the bedding with modules laid over.

Again, always pay attention to NOTES section.

For example;

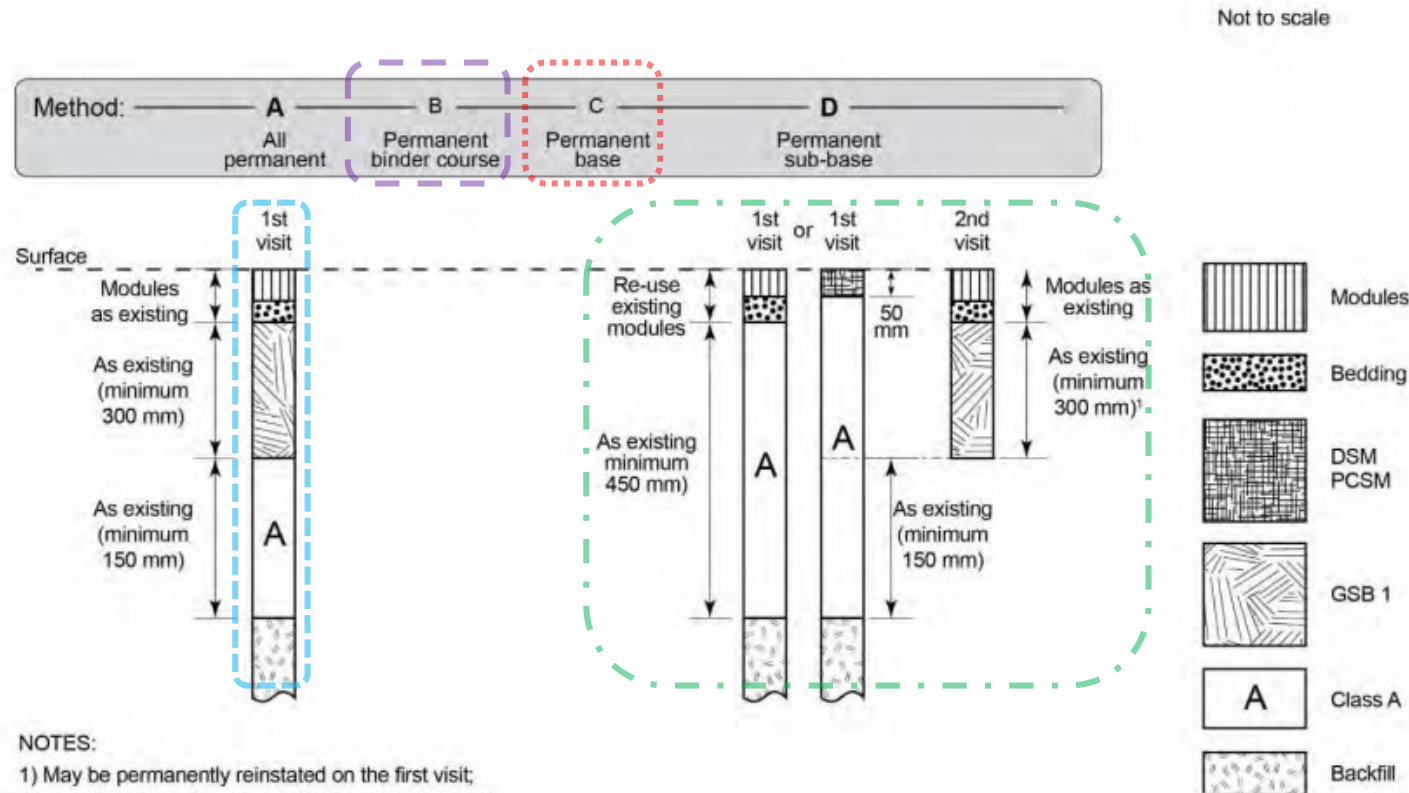
You can see from Note 3, that you can use a cement bound granular material (CBGM) as a sub-base in small openings and narrow trenches. This has to be minimum of 150 mm thick and the base has to be a bound material for this to apply (*the class A should not be unbound material*).



# Appendix A6 – Modular Roads

Figure A6.3 – Modular Roads (granular base) Types 3 & 4

Figure A6.3 Modular roads (granular base) types 3 and 4



**NOTES:**

- 1) May be permanently reinstated on the first visit;
- 2) For alternative reinstatement materials refer to A9;
- 3) In small openings and narrow trenches CBGM base may be used as sub-base. Thickness must be 150 mm and the base must be bound.

**Method A** is still the preferred option, and the base layer is to match existing or 300 mm whichever is greater.

**Method B** Does not apply in modular road construction.

**Method C** also does not apply in modular roads.

**Method D** is where you have laid a permanent sub-base layer and will return to extract the interim materials above it. The first visit will incorporate class A materials to match existing (or minimum 450mm layer thickness, whichever is greater) and bed in re-used modules. Or it may simply apply a class A material below an interim 50mm layer of bituminous. The second visit will introduce a GSB Type 1 base layer to match existing thickness (or 300mm minimum, whichever is greater) and then the bedding with modules laid over.

You will see from the previous pages, that essentially, the only thing that has changed with these modular reinstatements is the type of materials used at base layer. Therefore, we have applied a bituminous base at relevant layer thickness, a composite base at relevant layer thickness, and finally this page which relates to granular base layer and relevant layer thickness.

# A6 - Summary



What are modular roads?

They are roads surfaced by decorative blocks or modules over a suitable construction.

Why are only Types 3 & 4 roads allowed for in relation to modular reinstatements?

Its most likely because roads of heavy duty usage would not bear up to the stresses and strains if constructed as modular. They are generally more for decorative purposes.

What are the different kinds of modular roads?

Essentially, all modular roads will be similar in appearance from the surface. What you have to consider is what materials are used below at base layer and below.

What difference does this make?

Simply, when you think of structural integrity of base layer, a bound material will be stronger than an unbound material. Therefore, a bituminous base layer of 100 mm thickness equates to a CBGM of 150 mm thickness, or a granular material of 300 mm thickness. These are the three options allowed for in modular roads construction.

Is that all that's different?

Essentially, yes.

But make sure you comply with the minimum requirements of all other structural layers for materials applied below the base layer.

