Norm UK modules 00 gauge Scale 1:76

Version 16.02.2014

Topic:

With this Norm we try to simulate typicale British Rail singe and double track lines in the Southwest, south of London, northern England, the Midlands and adjacent Regions (e.g. East Anglia) as well as neighbouring Wales and Scotland.

Operating concept:

Operating follows Fremo practice point to point. Junctions and stations with diverging routes are possible and welcome.
Trains are to be run with timetables and in fastened model time. Freight traffic will be done with wagon cards and waybills.

Modules

Profiles:

To give the opportunity to model different landscapes, we do not have one major profile, we offer a pool of different profiles.
All profiles exist in a single or double track variant.
Our profiles are the same as Fremo H0-RE uses them since many yaers.

Single track 500mm width:

- H0-E96 - flat profile low version (30003) - flat landscape with low embankment

- H0-B96 - hill profile low version (30002) - one sided slope profile

- H0-F04 - flat profile low version (30121) - flat landscape without embankment

Double track 546mm width:

- H0-2E99 - flat profile low version (30015) - flat landscape with low embankment

- H0-2B00 - hill profile low version (30029) - one sided slope profile

- *H0-2F04* - flat profile low version - flat landscape without embankment
(this is a new profile and not in the H0-RE norm and must be self made)

Special profiles:

To model special landscape you can use a Valley type profile from the US-Modellers

- Fremo USA-H0 Valley single track (30006)
- Fremo USA-H0 Valley double track (30017)

These profiles cannot be connected directly with the H0-RE profiles!

If you didn't find a profile here which allows you to model what you want, you can also use all other Fremo H0-profiles too.
If you do so, you have to provide jumper modules. If you don't, the use can be denied by the layout planner!

Ready-to-use profiles can be obtained from Fremo member Harald Brosch:

http://www.modulbahner.de/numerisch/html/default.html

The 5-digit numbers at the profile description above are his order number for this profile.

If you want to saw the profiles by yourself, please log in (!) at the Fremo homepage and have a look at the H0-RE norm for the profiles.

If you build a station or junction, please use the same profiles at the outer connecting ends as you use with track modules. The width however is your choice and it is in your hands to build a matching connection without breaks in the landscape.

Module Geometry:

The module geometry (lenght and width) between the end profiles is free to you. Please pay attention to handiness for transport, because modules with say more than 1300 mm in length have been found to be impractical (staircases, stairways).

For modules that are to be regarded as a single unit, e.g. Stations or sections of several individual modules, the transition between these modules can be freely selected.

Module Height:

The height between floor and the top edge of the track is 1300mm

Module Legs:

All modules with a lenght of more than 500mm must have their own legs. The style of legs and its fastening is up to you.
A height adjustment can be provided, but must have a plastic or felt cap, to avoid scratching of hall floors.

Colour of module frames:

For an optimal external appearance, the colour of the module frame should be uniform. We use RAL 8011 Nußbraun (walnut brown) paint.

Track material:

Preferred is Peco Code 75, Tillig-Elite Code83, C+L Finescale or SMP. You can also use 100% self-built track and turnouts.
A 3rd rail to a Southern prototype could be added. The position of the 3rd rail is not standardised, because the Southern Railway did not have a standard too.

Radius of curved track:

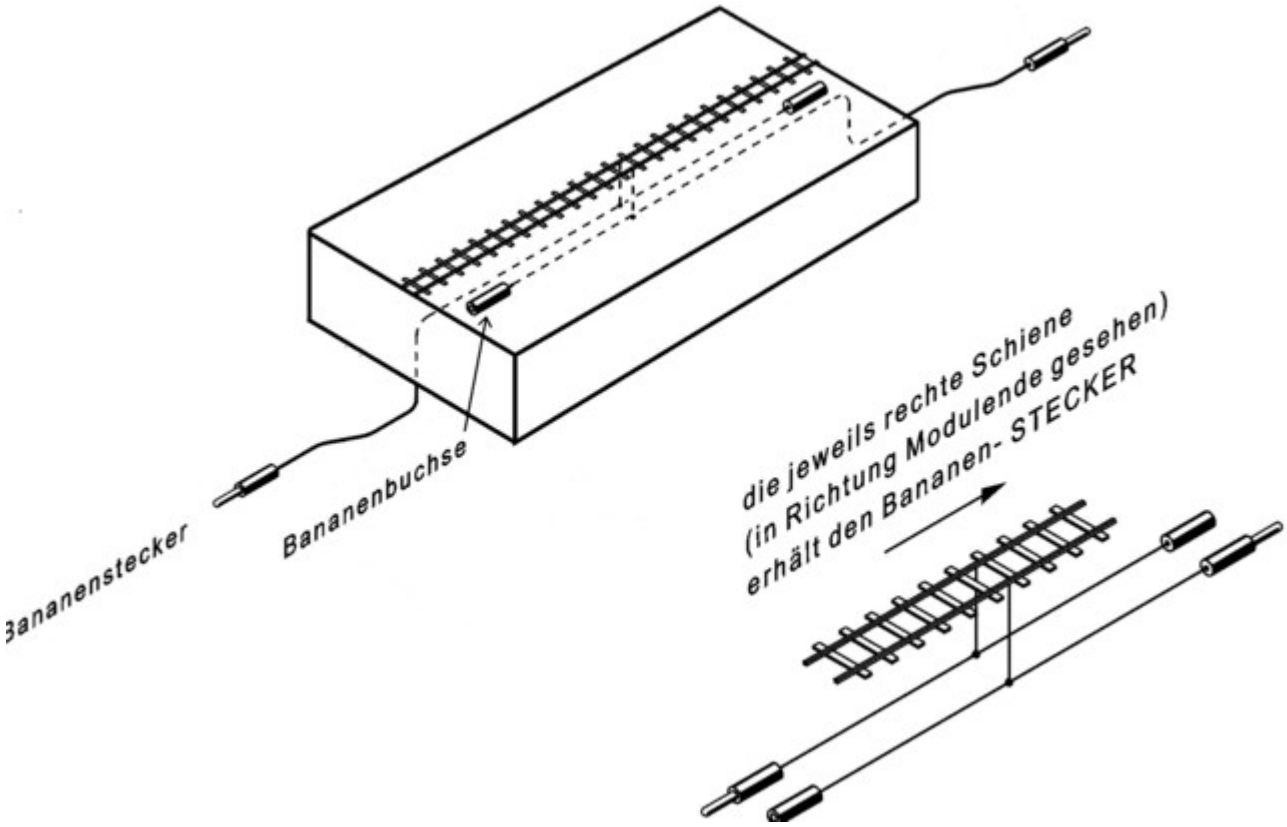
As far as we know yet, the railways of Britain set a normal radius of 200m for passenger lines, with a minimum radius of 150m. The 200m radius must not be passed with more than 25mph. This would be 2.63 m and 1.97 m in 4mm scale.
Thus a minimum radius of 2000mm is recommended for Main tracks in open-line modules and through lines in stations as a compromise. Larger radii are recommended.
Main tracks for pure freight allowed the prototype with 125m must be created that are for 1:76 1.64 m, rounded to 1500mm recommended. Larger radii are very welcome here.
Sidings for passenger trains shall not deceed 910mm radius, for the pure freight the radii may be down to 610mm as an absolute minimum, e.g. in ports and industries.
In Fiddle yards no points with a smaller radius than 910mm should be used, which corresponds to the medium Peco turnout.
At the end of the module the tracks are to be butt jointed, rail joiners are not allowed! It is important that the track is at a right angle to the module end. The rail profiles must never protrude beyond the end profile and should end with a 0.25 mm gap to the module end. They need to be securely fastened, either by soldering on a brass screw with the head adjusted to the profile, or by the Weinert rail connector for module transitions with molded screw 74019.

Track separation:

On double track lines the separation of track centres is 46 mm. The long axis of the module is exactly centred between the two tracks, so that symmetrical profiles can be freely used in layouts.

Electrics:

Control is via DCC and LocoNet, as usual in Fremo. Long addresses should be used for locomotives. There is a list of loco addresses to avoid duplications, please ask the module coordinator.
Every module needs two through cables with 1,5 mm diameter, one red and one blue. One rail is the blue one, the other is the red one. Near every module end the left hand rail cable ends in a 4 mm diameter socket, the right hand rail cable has an extension of 400 mm with a banana plug attached. Modules are electrically connected by plugging both adjoining banana plugs (Bananenstecker) in the matching socket.



(Source of sketch: Fremo USA Southwest Division)

Double track modules need to be electrical devided! The wires, sockets and plugs were doubled, but please be sure that they still can be identified without problems. You could use wires of other colours for the other track.

It is senseful to target the following cable colours:

Blue - DCC Pol 1
Red - DCC Pol 2
Black - Point motor common return
Yellow - Point motor left
Green - Point motor right
Brown - Point frog polarisation

If a power supply for point motors, signals, level crossings, lightings etc. is necessary, a seperate transformer needs to be provided. It has to be accredited.

<u>There must not be any 230V installations inside the modules!</u>

Module numbering:

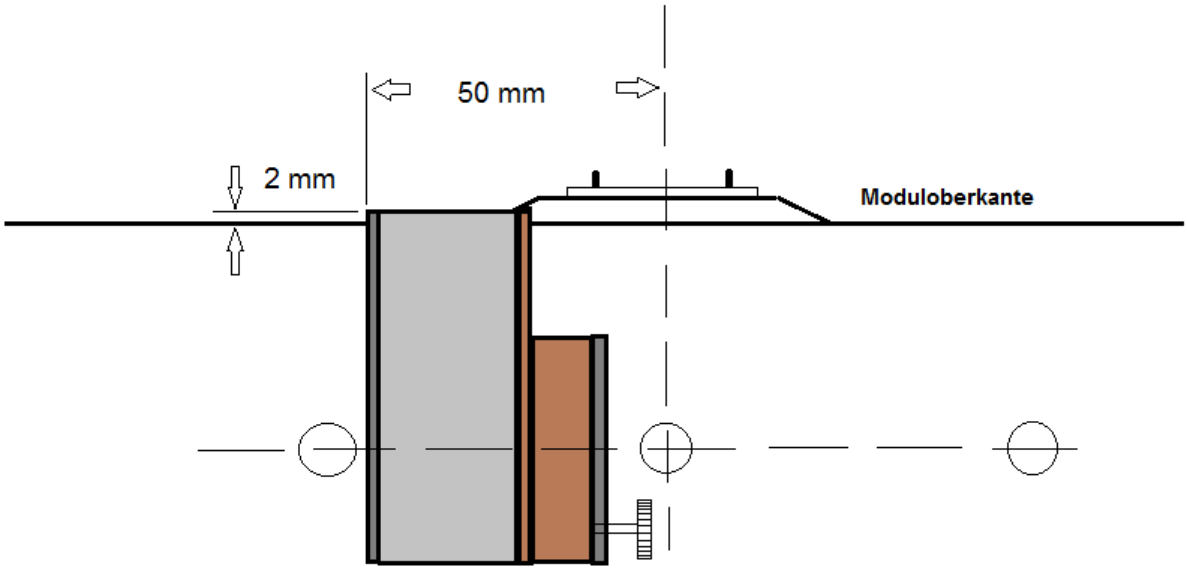
For CAD drawing every module gets a number. The owner has to mark its modules with this number. The following code is used:
76ABcd01
76 means 00 scale, ABcd is an abbreviation for its owner (first letter of the first name, first three letters of the surname) and 01 is the running module number. If a group of modules belongs together, there is just one number for the whole group. In this case, the individual modules are distinguished by small letter suffixes beginning with a (e.g. 76TFre02a). The numbers are centrally issued by the module coordinator.

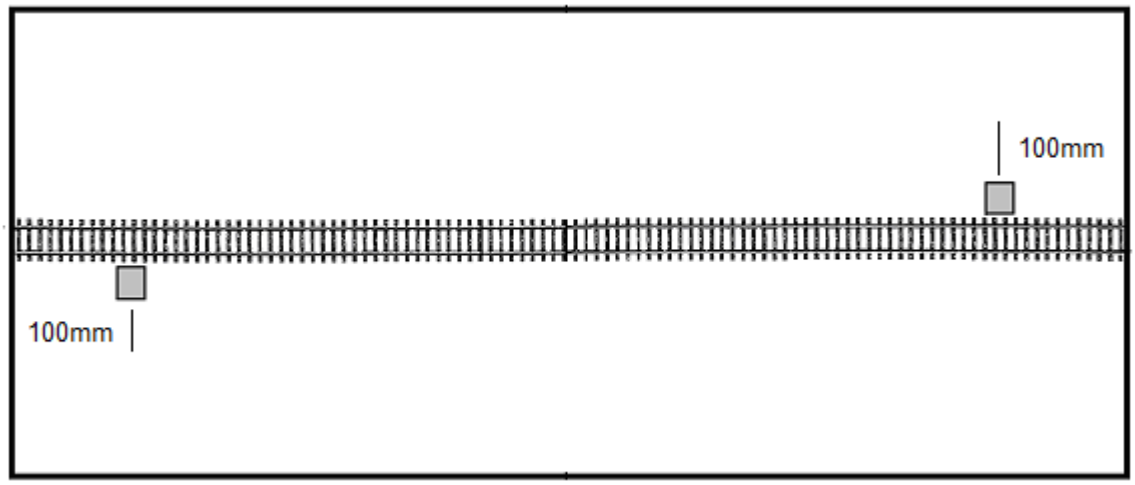
Couplings:

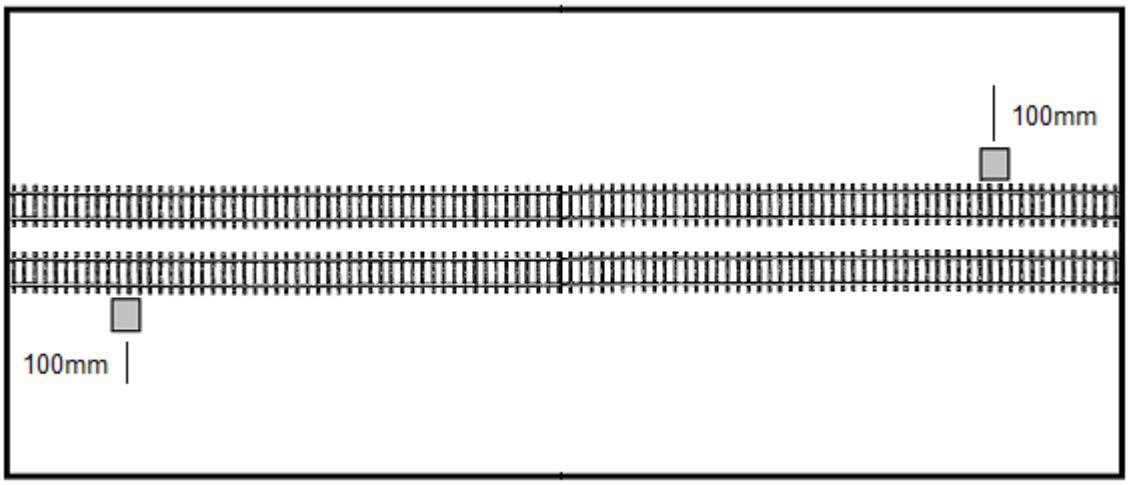
We use the slim line Tension lock coupling. Fixed rakes may have differing couplings within. Locomotives need to have a coupling at both ends. Further couplings like the Kadee coupling are currently evaluated.

Signals and Signal sockets:

All signals must be of a British prototype. Semaphores or colour signals are possible, and they may be locally or (preferred) remotely controlled.
In open line modules the so-called “Wattenscheider Signalschacht” (Wattenscheid signal slot) may be used. This is a normed slot that can carry a signal beam. The signal beam may be equipped with a semaphore or a colour light signal.
It is much recommended to equip about every second newly built module with those Wattenscheids.
Two Wattenscheids should be built in, one each side of the track. They need to be 100 mm apart to warrant accessibility to the holding screws. This screw needs to point towards the track.
The distance of the slot to the track centre is 50 mm.
Train running control by signals is not intended.







Every slot needs a filling peace which disguises the slot as a bush, as plain ground etc.
Modules specially intended as duck-under modules shouldn't get Wattenscheider signal slots.
Further information on “Wattenscheider Signalschächte” can be found here:

http://www.fremo-net.eu/339.html
http://www.nord-com.net/stefan.bormann/signal/wattenscheider/history.de.html
http://www.boerde.de/~horstf/bahn/pfeiftafel/signalschacht/
http://home.arcor.de/ck6/modellbahn/Signaltraeger/Anleitung.html

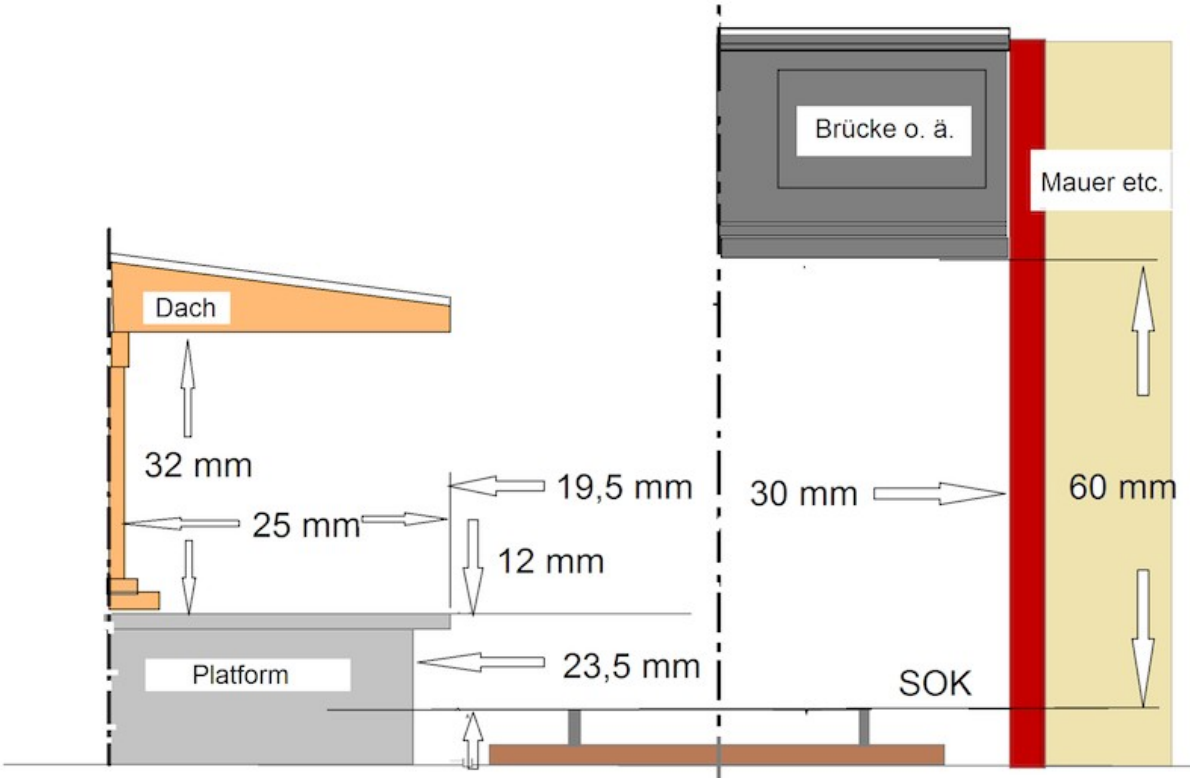
Point control:

Points may be controlled electrical, mechanical or manual. In every case the control should be accessible from each side. A prototypical interlocking is desirable.

Landscape, ballast and fences:

The landscape is mainly up to you, but it should depict a summer/autumn theme. At the module ends Woodland T49 green Blend Fine or static grass with a similar colour should be used in 25 mm width.
The middle grey Woodland/Noch No 95 651 or similar is recommended as track ballast.

The 00 scale loading gauge drawings from the British Railway Modelling Standard Bureau (BRMSB) are valid.
The shown measurements are valid for straight tracks and platforms only. In curves the distances must be widened.
Because some vehicles may not be conform to the BRMSB norms it is recommended to do some tests. Useful vehicles for this are the LMS 57' coaches from Bachmann/Mainline.



The line needs to be fenced off at both sides with suitable fences, walls, hedges, thick bushes etc., e.g. Peco Flexible Fencing LK-45. Those fences should have a distance of 50 mm from the track centre.

This standard applies to newly built modules, existing modules have are excepted, but it is desired to adapt existing modules to bring them nearer to the norm, as far as possible, or build them new under the current standard, if they differ too much from the norm.

Suggestions, additions and alterations are welcome.