

APPLICATION FOR DEPARTURE FROM STANDARDS

Departure ID: 74190 (Revision 0 of 0)
Road: A12
Scheme: ASC6 A12 - JUNCTION 11 TO JUNCTION 12 NORTHBOUND AND SOUTHBOUND
NARIS/PIN Ref: 545669/AMEY/0000003
Road Section Ref: //
DBFO Ref: //

Agent Ref: AMEY
Agent Title: Amey - A12 Junction 11 to 12 Northbound and Southbound Running of 6 mm & 20 mm SMA

Location: A12 (J11-J12) Southbound:

Main Carriageway - 1585A12/11, 1585A12/17, 1500A12/112, 1500A12/116, 1500A12/120, 1585A12/36

Slip Road - 1500A12/311, 1500A12/312, 1500A12/307

Lay-by - 1585A12/85, 1585A12/76, 1500A12/113

Departure Summary: Amey - A12 Junction 11 to 12 Northbound and Southbound Running of Running on 6mm & 20mm SMA Binder Course
Approval for the running of the Running on 6mm & 20mm SMA Binder Course of the carriageway, which will be swept, inspected and subject to a 40mph speed limit with 'no overtaking' & 'temporary road surface' signage with Grip Tester measurements taken once a week to ensure skid resistance is maintained.

Status: Approved with comments

Structure Name/File Reference: Designer/Assessor Proposing Departure: AMEY
Standards <i>Volume:</i> DMRB Vol 07 Section 5 <i>Standard:</i> HD 36/06 - Surfacing Material for New and Maintenance Construction : Design, Road Pavement, DMRB Vol 07 Section 5 (2014) <i>Clause(s):</i>
Supporting Documentation <i>Drawings:</i>

Submission Details

15.1 Submission

The Surface course on A12 Jct 11-12 Northbound between MP10/70+80 to 10/85+70 (Lane 1 and 2) & Southbound between MP10/70+80 and MP10/84+87 (Lane 1 and 2) near Brentwood has reached the end of its effective life and requires replacement. The scheme proposed is to remove the top 50 mm of the existing surfacing and replace it using a 2 layer system comprising of a 0/6mm SMA BIN PMB completed with a new thin surface course system, the latter of which will comply to SHW Series 900 Clause 942. It is also proposed to treat certain areas to a depth of 100mm with the extra 50mm to be made up from SMA20 bin Agg. 20mm

The works are carried out under night time contraflow operation with all lanes reopened during the day at a reduced mandatory speed limit of 40 mph. Crossovers are being installed or upgraded to allow contraflow working to be used.

As the treatment is to full width of the carriageway over a long length the two layer approach has been adopted to allow outputs to be maximised and the number of joints to be significantly reduced compared to the traditional 50 mm thin surface course inlay constructed in a series of patches.

Following the removal of 50mm of existing material the proposed treatment is to install a **20mm & 6mm SMA Bin** onto the planed surface until a minimum of 3 km is complete allowing the surface course to be efficiently applied. As a result the **20mm & 6mm SMA Bin** will be used as temporary running surface for up to a 4 day period in any one location as the works progress along the carriageway. The surface will be subject to an inspection at the end of each night prior to opening to traffic. During the day the binder course will be trafficked at a reduced speed of 40 mph with the appropriate temporary marking, temporary surface signage and no overtaking. During the daytime running the surface will be inspected by a mobile patrol travelling at traffic speed every 2 hrs The additional measures that will be taken while the **20mm & 6mm SMA Bin** is being used as a temporary running surface will be to apply a 40mph speed limit with road signage stating “no-overtaking” & “temporary road surface” and Grip Tester measurements will be taken to the trafficked section to ensure skid resistance is maintained [minimum Grip Number of 0.39 based on a SCRIM IL of 0.35 and a correlation factor of 0.89]

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15.2 Technical Information / Justification:

15.2.1 Supporting Documentation:

- Location Plan Drawing No 6/545669/DR/0100/01
- HD 36/06 Para 2.3 & 2.4
- Asphalt Type Test Report and CE certificate for 0/6mm SMA

- BIN PMB
- Asphalt Type Test Report and CE certificate for 20mm SMA Bin PMB
 - GD04 – Safety Risk Report (545669)

All the above are supplied in pdf format.

15.2.2 Specialist Information:

None

15.3 Secondary Standard:

N/A

15.4 Associated Departures:

Web Das Id 73830 and 73831 has similar departures regarding this.

15.5 Repeat / Similar Departures:

Web Das Id 73830 and 73831 has similar departures regarding this.

15.6 Bulk Departure: (for Structural Departures only)

None

15.7 Proposer:

Technical Director

AMEY

Manton Lane

Bedford

Bedfordshire

MK41 7NU

Mobile:

Email:

Benefits & Justification of Departure to Highways Agency

Innovative? Y

Added Value: Non Monetary

16.1 Benefits:

16.1.i Safety (road users)

The running of the **20mm & 6mm SMA Bin** surface for a period of time will allow the installation of a consistent surface course as part of the 50mm 2 layer system for longer distances which will provide a better riding quality for road users. Where required, as identified by the scheme drawings, deeper treatments will be made to restore the carriageway condition using a 0/20mm SMA BIN PMB. Both the SMA Binder Course materials will be manufactured with a 53PV Aggregate.

The finished surfacing will have a longer life requiring less interventions in the future, this method also reduces the overall construction period by 5 nights compared with plane out and inlay method reducing the risk associated with diverted traffic

16.1.ii Safety (construction and maintenance)

The granting of the departure allows the adoption of a more efficient and safer construction methods with the laying operations performed over large areas and isolated from other works such as cold milling and lining as opposed to the layback approach that concentrates activities in locations

16.1.iii Technical

Running of the **20mm & 6mm SMA Bin** as part of the installation of the 2 layer system will ensure a better riding quality for road users by providing consistent surface course for a longer distance and complete works within the allowed working period. Resulting in less intervention in the future and better ride quality of the work. Where required, as identified by the scheme drawings, deeper treatments will be made to restore the carriageway condition using a 0/20mm SMA BIN PMB. Both the SMA Binder Course materials will be manufactured with a 53PV Aggregate. We will use skilled and trained operatives to inspect and install the materials

during the traffic management, planing and construction of the contract. Furthermore, we will apply a testing regime that confirms the expected quality and performance from the material and installation operations.

16.1.iv Programme

The installation of the **20mm & 6mm SMA Bin** and the running of its surface to traffic during the construction of the 2 layer system will help to finish the works more expediently than the initially allowed working period hence bringing additional benefits to the road users and the Agency in terms of network availability.

16.1.v Budget

The use of the 2 layer system and the running of the **20mm & 6mm SMA Bin** layer of the system as a temporary running surface will have a positive/favourable impact on the budget when compared with the convention method of constructing this type of work under night-time possession

16.1.vi Environmental

The 0/6mm SMA BIN PMB forms part of a 2 layer system comprising of the 0/6mm SMA BIN PMB at 20mm layer thickness and will be finished with 30mm of long life thin surface course system. Where required, as part of the pavement treatment a 0/20mm SMA BIN PMB will also be utilised and be applied to these areas of deeper treatments as identified on the pavement drawings. It will also be manufactured using a 53PSV aggregate. The 0/6mm SMA BIN PMB will be manufactured with a 53PSV aggregates while the 30mm of long life thin surface course system will be manufactured with a 65PSV aggregates. This means that not all of the total thickness of the 2 layer system will be manufactured with the higher 65 PSV aggregate and hence reduce the impact on the environment of an already increasingly scarce and expensive material, resulting in less carbon emissions.

16.1.vii Innovation

The use of a 50mm 2 Layer System has not been used extensively on the network until now, however this proposed solution will provide a better riding quality for road users as there will be less need to form construction joints between operational phases of the work as night-time inlay work would not normally facilitate the option to improve ride quality of the pavement and the system will enable a large area to be resurfaced in a single shift, reducing the number of construction joints and improving the longer term durability of the surfacing as a result.

16.1.viii Durability / Maintenance

The application of the 2 layer system will assist in the Agency goal of Safe Roads, Reliable Journeys and Informed Travellers in that the materials used in the system and the method used to construct it all ensure that the installed

pavement using a long life thin surface course in conjunction with the **20mm & 6mm SMA Bin** will be both a durable and maintenance reducing pavement.

16.1.ix Network Availability

The factors identified in Section 16.1 – Benefits and in particular sub-sections 16.1iii - Technical, 16.1iv – 16.1v – Program, 16.1vii – Innovations & 16.1viii - Budget and Durability/Maintenance with the installation of the 2 layer system facilitated by this departure application to allow traffic to run the **20mm & 6mm SMA Bin** as a temporary surface. During the works there will be no reduced capacity during the day, the overall works time is reduced.

16.2 Impacts:

16.2.i Safety (road users)

The risk of trafficking of **20mm & 6mm SMA Bin** for a short period with a temporary 40mph speed restriction may provide unacceptable surface.

16.2.ii Safety (construction and maintenance)

None.

16.2.iii Technical

None.

16.2.iv Programme

None.

16.2.v Budget

None.

16.2.vi Environmental

None.

16.2.vii Innovation

None.

16.2.viii Durability / Maintenance

None.

16.2.ix Network Availability

None.

16.3 Risks:

16.3.i Safety (road users)

The risk of trafficking the 20mm & 6mm SMA Bin for a short period with a 40mph speed restriction may provide unacceptable surface.

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16.3.ii Safety (construction and maintenance)

None

16.3.iii Technical

None

16.3.iv Programme

None

16.3.v Budget

None

16.3.vi Environmental

None

16.3.vii Innovation

None

16.3.viii Durability / Maintenance

None

16.3.ix Network Availability

None

16.4 Mitigation:

The measures we have taken will ensure that in as far as is reasonably practicable the risks to the public have been mitigated as the surface of the 0/6mm SMA BIN PMB will be subject to an overall daily inspection and once running of the surface during the daytime takes place, will be subject to a 2 hourly inspection.

The additional measures that will be taken while the 20mm & 6mm SMA Bin is being used as a temporary running surface will be to apply a 40mph speed limit with road signage stating “no-overtaking” & “temporary road surface” and Grip Tester measurements will be taken to ensure skid resistance is maintained. If skid resistance falls below the required 0.39 the application of wearing course will be bought forward and the affected area surfaced the following night.

In conclusion, we are confident all of these measures serve as acceptable mitigation.

16.5 Overall Justification:

16.5.i Reasons why the Benefits (16.1) outweigh the Impacts (16.2)

As a result of the measures we have taken our proposal offers a consistent surface course with a reduced amount of construction joints and the installation of a 20 year Long Life Surface. The application of a 40mph speed limit with road signage stating “no-overtaking” & “temporary road surface” and Grip Tester measurements will be taken once a week to ensure skid resistance is maintained means that all measures have been taken in as far as is reasonably practicable to reduce risk to the public.

16.5.ii Reasons why the Risks (16.3) after Mitigation (16.4) are ALARP

Given the mitigation described in 16.4 we are confident that the risks after mitigation are ALARP

16.5.iii Compatibility with adjacent roads

The 2 layer system proposed has 100% compatibility with adjacent roads and there are no perceived issues with the materials or their installation that would cause any compatibility issues with adjacent roads.

Consultants Comments

NA

Project Sponsor - OD Comments

Project Sponsor:

I recommend that these Departures are progressed for approval

SSR Comments

1. This Departure seeks to allow traffic to temporarily run on the binder course whilst pavement maintenance works are being carried out.
2. This will enable a large area to be resurfaced in a single shift, reducing the number of construction joints and improving the longer term durability of the surfacing.
3. The following information has been subsequently provided by Service provider:
 - A temporary speed limit **will** be maintained for the duration of this work
 - Police Enforcement speed cameras **will** be in place for the duration of this work
 - 'Temporary Road Surface' signs **will** be in place for the duration of this work
 - Grit **will** be placed on the sacrificial material by means of a grit box roller
 - Grip Tester measurements **will** be taken **once a week** to ensure skid resistance is maintained [**minimum Grip Number of 0.39** based on a SCRIM IL of 0.35 and a correlation factor of 0.89]
 - **Daily Visual Surveys** to observe any loss in grit. Should the loss of grit be observed at any stage during the works, resurfacing will be carried out earlier than currently planned and within the next available shift. During the daytime running the surface will be inspected by a mobile patrol travelling at traffic speed every 2 hrs.
5. It is understood that the temporary speed limit will be 40 mph.

6. Although Griptester is not normally used for skid resistance measurements on the HA network, in this particular instance it is being used to monitor a relative change and the absolute value is of less importance. It is therefore considered appropriate for this particular work.

7. The procedure above describes a rational process to manage the risk of skidding accidents whilst the works are being undertaken.

8. I recommend that this Departure is approved.

Senior Pavement Advisor, 19.01.2015

1. I agree with the recommendations of the Senior Pavement Advisor and this Departure is therefore approved subject to the above comments.

Pavement Materials Team Leader

19 January 2015

Diary Snap-Shot:

Bulk Departure Details

Departure	TA Number	Structure Key	Location
74189			A12 (J11-J12) Northbound:Main Carriageway - 1500A12/126, 1500A12/125, 1500A12/123
74190			A12 (J11-J12) Southbound:Main Carriageway - 1585A12/11, 1585A12/17, 1500A12/112, 1