PROSJEKTSTUDIE

Project study
of the installation work in Opheimsgata
Odda town centre, Norway

Betomur deliverables:
Chembuild bedding mortar
Flowpoint grout

This is a project study and reference document for projects in which Betomur AS
is involved as a supplier of know-how and materials, if necessary participating in an introductory demonstration.
The first few pages give an introduction to the project as seen from Betomur AS's position.
Following that, we have included unedited feedback from parties which took part in the project.

OWNER: Norwegian Public Roads Administration, Odda Division

CONTRACTOR: Odda Municipality

BUILDER: E-Opedal og Sønner ANS

SITE MANAGER: Asbjørn Kråkevik, E-Opedal og Sønner ANS

PROJECT DESCRIPTION:
7 raised and 4 ordinary pedestrian crossings in natural stone. Opheimsgata in Odda.
E-Opedal & Sønner ANS has upgraded the whole of Opheimsgata for the Norwegian Public Roads Administration. In connection with this, Betomur AS supplied the UltraCrete System for installation of natural stone in the roadway.

Approximately 350 square metres of small paving stones were laid, distributed in 11 pedestrian crossings according to Betomur's recommendation.

Opheimsgata has an AADT of between 4000 and 5000.

SITUATION:
E-Opedal, in consultation with Eystein Knag of the Norwegian Public Roads Administration, decided to use Betomur AS's system for the construction of pedestrian crossings.

The structure consists basically of:
A reinforced, poured-in-place concrete slab
Cobblestones set in UltraCrete HS bedding mortar
After installation, pointing is carried out using UltraCrete Flowpoint.

THE OBJECTIVE OF THE PRODUCT CHOICE:
To obtain a strong, stable pedestrian crossing which does not subside, in view of the considerable amount of heavy traffic passing through daily and mixed experience with crossings installed using other methods in the past.

UltraCrete HS was used as the bedding mortar. In one of the crossings, a test was performed with EP-R9 epoxy to determine whether this gave better bonding.

Standard grey UltraCrete Flowpoint was used to point the joints in the crossings.

Inspection of the pedestrian crossings after about one year's use. All the crossings were assessed. Opheimsgata has heavy through traffic, with busses and heavy goods vehicles passing through on the main route between Bergen and Oslo. As the photographs show, after one year the traffic has already caused considerable damage to all the concrete ramps at the pedestrian crossings.

The lowest crossing in Opheimsgata is not raised and therefore does not have concrete ramps. The crossing itself is pointed using Betomur UltraCrete Flowpoint and as the close-up shows, the paving and joints are completely undamaged and show no sign of wear, in spite of the loads to which they have been subjected.

CONTRASTS:
These photographs show a roundabout located about 50 metres from the pedestrian crossings, which was constructed without using Betomur's system. It can be clearly seen that traditional pointing and a repair with different material do not function on similarly exposed surfaces.
All the photographs on this page are of the same roundabout.

CONTRASTS:
All the concrete ramps have sustained heavy damage, but the poured-in-place ramps were affected less than the prefabricated elements. All the pedestrian crossings were undamaged, and what is most impressive is that although the concrete ramps are worn, cracked or subsided, the Flowpoint grout and natural stone remain completely undamaged ALL THE WAY TO THE EDGES!

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CONTRASTS:
This concrete ramp rocked about 1.5 cm each time a vehicle passed!
The natural stone and grouting remained firm and undamaged.

The crossings are made of attractive stone, transitions are smooth and ensure pedestrians walk on an even surface.

However, the impression is considerably impaired by the appearance of the ramps.

Opheimsgata in Odda town centre. Odda Municipality. November 2007

It was not difficult to see where the best investments had been made …


ULEFOS

Photographs showing the actual setting and jointing with Flowpoint. The photographs show how the crossing is installed on a concrete bedding before the stone is laid in Betomur's UltraCrete bedding mortar.
The installation is then pointed using Betomur UltraCrete Flowpoint, which is poured over the stones so that it runs into all the joints and crevices.

After a few minutes the surface is hosed clean and the job is done!

Statement by Asbjørn Kråkevik
Site Manager, E-Opedal & Sønner ANS, Odda:

OBJECTIVE:
The objective was to find a solution which would withstand the heavy loads to which this type of pedestrian crossing is subjected.

PROJECT DESCRIPTION:
The project consisted of 11 pedestrian crossings with a total area of 350 m^2.
As for the practical use of these products, I am not the person to give an opinion: that is up to the landscape gardeners.

FEEDBACK:
I will just describe briefly my experience of the installations, now that they have been in use for a good year.

This appears to be a good method for constructing a pedestrian crossing, the only weakness being the concrete ramps which lift the vehicles up onto the crossing. These should have been constructed more solidly.

Queries about the installations can be addressed directly to Asbjørn Kråkevik at:

Telephone: +47 908 59 541 or ak@opedal.no

Asbjørn Kråkevik (left) and Betomur's Oddbjørn Andersen.

From an inspection in November 2007 – about a year after completion of the project.

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