

FORM 410



GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
Department of Transportation and Works
Highway Design Division

SECTION 410

SELECT BEDDING FOR STORM SEWERS, SUB-DRAINS AND CATCH BASINS

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410.01 SCOPE

This work shall include labour, materials, and equipment use required to provide, place and compact select bedding for storm sewers, sub-drains, and the sides of catch basins.

410.02 MATERIALS

Select bedding material shall be crushed stone or pit run gravel and shall have the gradation of Class "B" as set forth in Section 315 "Selected Granular Base Course".

410.03 PLACING OF BEDDING

Prior to any placing of bedding, material from cave-ins, accumulations of water and muck and all other objectionable matters shall be removed, damaged sections repaired or removed and replaced, and any other repair or attention required for a workmanlike job shall be performed.

No placing of select bedding shall be carried out until the works to be covered by bedding have been inspected and passed for backfilling by the Engineer.

Chutes or other proper means shall be used to prevent segregation of materials or displacement of structures or pipes. Improper dumping of select bedding material will not be permitted.

Select bedding material for pipes and catch basins shall be placed in layers not exceeding 200mm in thickness loose measurement. Each layer shall then be compacted to the density specified before a further layer is placed.

Select bedding for storm sewers and sub-drains shall be placed as shown in Form 1235 "Typical Storm Sewer Bedding and Backfill Details".

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410.03.01 Placing of Under Bedding in Trenches

In the case of rock bottomed trenches, select bedding shall be placed in the bottom of the trench to provide under bedding for the pipe.

In the case of Other Material bottomed trenches, no select bedding is required for corrugated steel pipe. However, if plastic pipes are to be used then select bedding shall be placed in the bottom of the Other Material bottomed trench to provide under bedding for the plastic pipe.

Under bedding shall be shaped to conform to the under side of the pipe and be graded to conform to the required grade for the pipe.

410.03.02 Placing of Bedding in Each Side and Over Pipe

When placing select bedding over pipes, bedding operations shall be kept back at least 3m from the advanced end of the pipe line, except for the completion of any section or at the termination of a day's work. Uncovered pipe, left overnight, shall be backfilled as soon as possible to the end of the pipe without covering it. The trench shall be filled with select bedding material to a height of at least 300mm above the top of the pipe, or when more than one pipe is laid in the trench, to a height of at least 300mm above the top of the highest pipe.

Select bedding material placed around a pipe shall be maintained at equal levels on each side of the pipe at all times, so that the intended alignment of the pipe be achieved.

410.03.03 Placing of Bedding for Catch Basins

The excavation surrounding the exterior of the catch basin shall be filled with compacted select bedding material up to subgrade elevation. Care shall be exercised in compacting the material to assure that the structure is not disturbed.

410.04 COMPACTION

Each layer of select bedding material shall be compacted to at least 95% of Standard Proctor Density (ASTM D698-78).

410.05 MEASUREMENT FOR PAYMENT

410.05.01 Measurement for Payment for Pipe Bedding

Measurement for payment for select bedding when used to cover storm sewers and sub-drains, will be by means of the net nominal volume of select bedding, measured in cubic metres rounded to the nearest whole number.

Net nominal volume of select bedding for storm sewers and sub-drains being defined as the gross nominal volume of select bedding material, less the nominal volume of the pipe, or pipes, treated with select bedding.

In trenches where under bedding is not required, such as Other Material bottomed trench in which a corrugated steel pipe is to be placed, then gross nominal volume of select bedding shall be defined as the volume of a rectangular prism calculated as the product of: width equal to the nominal diameter of the pipe in metres plus 0.6m (total width minimum = 1.0m), depth equal to the pipe nominal diameter in metres plus 0.3m, and the length in metres of pipe treated with select bedding.

In trenches where under bedding is not required and where a perforated pipe is placed in a trench alongside of a storm sewer, then the gross nominal volume of select bedding shall be calculated as the product of: width equal to only the storm sewer nominal diameter in metres plus 0.6m (total width minimum = 1.0m), depth equal to the storm sewer nominal diameter in metres plus 0.3m, and the length in metres of the storm sewer pipe treated with select bedding.

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In trenches where under bedding is required, such as a trench with a rock bottom or any kind of trench in which a plastic pipe is to be placed, then gross nominal volume of select bedding shall be defined as the volume of a rectangular prism calculated as the product of: width equal to the nominal diameter of the pipe in metres plus 0.6m (total width minimum = 1.0m), depth equal to the pipe nominal diameter in metres plus 0.45m, and the length in metres of pipe treated with select bedding.

In trenches where under bedding is required and where a perforated pipe is placed in a trench alongside of a storm sewer, then the gross nominal volume of select bedding shall be calculated as the product of: width equal to only the storm sewer nominal diameter in metres plus 0.6m (total width minimum = 1.0m), depth equal to the storm sewer nominal diameter in metres plus 0.45m, and the length in metres of the storm sewer pipe treated with select bedding.

Nominal volume of each treated pipe being defined as the volume calculated from the manufacturer's nominal pipe diameter and the length of pipe treated with select bedding material.

410.05.02 Measurement for Payment for Catch Basin Bedding

Measurement for payment for select bedding when used for providing bedding for the sides of catch basins will be by means of the nominal volume of select bedding, measured in cubic metres rounded to the nearest whole number.

Nominal volume of select bedding for catch basins shall be defined as the product of catch basin outside perimeter measured in metres plus 1.25 metres, times the measured height in metres between underside of catch basin and subgrade elevation, times a nominal thickness of 0.3 metres.

410.06 BASIS OF PAYMENT

Payment shall be at the contract unit price per cubic metre for select bedding for storm sewers, sub-drains and catch basins.

Such payment shall be full compensation for all work herein described together with the labour, materials, and equipment use required to: supply, haul, place and compact the select bedding material, together with any unwatering that may be required to carry out the work.