

**.01 SUMMARY OF STANDARD COMPACTION REQUIREMENTS**

MATERIAL	LOCATION / USE	MINIMUM SPECIFIED COMPACTION	SPECIFICATION REFERENCE
Hot Mix Asphalt	Pavement Structures on Roads and Paved Parking Areas	92 % MRD	OPSS.MUNI 310
Granular "A" Base Course	Road, Curb, Sidewalk and Bikepath Construction	100 % SPMDD	OPSS.MUNI 501
Granular "B" Sub-Base	Road Construction	100 % SPMDD	OPSS.MUNI 501
Granular Backfill Form 600	Trench Backfill for Sewers, Watermains, Utilities, Catch Basins, Manholes, Valve Chambers	95 % SPMDD	OPSS.MUNI 401 OPSS.MUNI 402
Earth, Soils and/or Native Materials	Trench Backfill for Sewers, Watermains, Utilities, Catch Basins, Manholes, Valve Chambers	95 % SPMDD	OPSS.MUNI 401 OPSS.MUNI 402
	Embankment Fill and Subgrade Material for Pavements, Sidewalks and Bikepaths	95 % SPMDD	OPSS.MUNI 501
	General Fill for Landscaped Areas	90 % SPMDD	See contract documents
Granular Backfill around Structures	Fill next to Footings, Bridge Abutments and behind Retaining Walls	100 % SPMDD	OPSS.MUNI 401
Granular Bedding	Pipe Bedding for Watermains and Sewers	95 % SPMDD	FORM 600 OPSS.MUNI 441

- Notes:** [1] Unless otherwise directed, compaction will be assessed using a nuclear density gauge, as per ASTM D2922 and D3017.
- [2] MRD refers to **Maximum Relative Density** as determined by laboratory test method LS-287
- [3] SPMDD refers to **Standard Proctor Maximum Dry Density** as determined by MTO laboratory test method LS-706. Control Strips as outlined in OPSS.MUNI 501 may also be used to determine target density

## **.02    COMPACTION METHODS**

All contract references to % compaction or maximum compacted densities by whatever method specified, shall be interpreted as being "The maximum dry density as determined by current City procedures".

Current City procedures shall mean the method described in the current Standards:

D.698-70      Moisture - Density Relations of Soils Using 5.5 lb. Hammer and 12 in. Drop

D.2922-71      Determining the Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

D.2950-71T    Density of Bituminous Concrete in Place by Nuclear Methods.

As an expedient the City may determine the (degree of compaction) maximum dry density by "the constant dry weight methods", as set out in D.H.O. Research Report No. 141, together with such variations of the above methods as the City may from time to time introduce.

Any such deviation between current City procedures and methods formerly specified or any modifications to current City procedures which may be introduced shall be for the purpose of increasing the reliability of the test results and speed in field testing and will result in no increase in the compactive effort required.

All backfill materials shall be placed in layers not exceeding 300mm (12") in depth and compacted to a minimum of 95% Standard Proctor Maximum Dry Density - see Standard Compaction Requirements in COH FORM 900.01 and Specifications for Materials and Testing.