

## OPSS.PROV 351 – Construction Specification for Concrete Sidewalk

Comments received by TCP			
Comment ID	Organization	Comment	Response
321	Individual	351.05.01 Concrete - Quote from Specification: a) The minimum specified 28-Day compressive strength shall be 30 MPa, or as specified in the Contract Documents. Comment: Recommend following CSA A23.1 Class C-2 Exposure minimum strength requirement of 32 MPa.	For the design of a sidewalk, a minimum compressive strength of 30 MPa when tested at 28-Days is sufficient.
		351.05.02 Expansion Joint Material - Quote from Specification: Expansion joint filler material shall be asphalt impregnated fibreboard having a minimum of 12 mm thickness and shall be according to OPSS 1308 Type A Comment: Expansion joint material should be made of a non-absorptive material to ensure they do not cause potential damage due to expanding during freeze thaw cycles.	Material conforming to OPSS 1308 is non-absorptive.
		351.06.02 Hand Finishing Equipment and Joint Tools - Quote from Specification: Floats and joint tools shall be made of magnesium or wood. Comment: Wooden floats should not be used on air entrained concrete as they	Agree, a change has been made to the specification to state that all floats shall be made of magnesium.

		<p>are known to cause tearing of the concrete surface. The specification should state, floats should be made of magnesium.</p>	
		<p>351.07.09 Placing of Concrete - Quote from Specification: When there is an interruption in placing concrete greater than 20 minutes, the surface of the concrete shall be covered with wet burlap.          Comment: Concrete sidewalks are typically cured using white pigmented curing compound so wet burlap is not required and would dilute the curing compound and decrease its effectiveness, if used.</p>	<p>The intent is not that wet burlap be applied where curing compound has been applied, only where there is no curing. Agree, this could be clarified. A change has been made to the specification to state the following:   <i>When there is an interruption in placing concrete greater than 20 minutes, the surface of the concrete <u>where curing has not been applied</u> shall be covered with wet burlap.</i></p>
		<p>351.07.13.03 Contraction Joints - Quote from Specification: Contraction joints shall be placed at every third dummy joint and shall be sawcut or formed to a depth that is one quarter the thickness of the sidewalk.          Comment: Dummy joints are slowly being phased out on the Municipal side due to AODA requirements. Recommend removing dummy joints and promote saw cuts exclusively.</p>	<p>To remove dummy joints from concrete sidewalks further work and review with municipalities is required. This issue will be addressed in the next update.</p>
		<p>351.07.13.04 Expansion Joints - Quote from Specification: Expansion joints shall be filled with expansion joint material and shall be clean and dry at the time of construction.          Comment: Backer rods should be made of a non-absorptive material to ensure they do not cause potential damage due</p>	<p>The existing frequency and spacing of expansion joints is adequate to accommodate anticipated temperature peaks. The need to adjust spacing of expansion joints in consideration of even higher temperature excursions will be considered in future.</p>

		<p>to expansion and contraction during freeze thaw cycles.</p> <p>Quote from Specification: Expansion joints shall be constructed where sidewalks abuts a rigid object or changes direction.</p> <p>Comment: Due to the Climate Change, temperatures are rising and staying higher for longer periods of time which causes increased expansion of the concrete sidewalk. Therefore, it would be prudent to install some expansion joints on long sections of concrete pavement even if there is no change in direction or no rigid objects abutting up against the sidewalk.</p>	
		<p>351.07.21 Management of Excess Soils - Quote from Specification: Management of excess material shall be as specified in the Contract Documents.</p> <p>Comment: Contaminated soils can be remediated in-place reducing excess soil and minimizing the projects carbon footprint. In-place stabilization also eliminates the potential hazard of hauling the contaminated material to another site.</p>	<p>Management of excess material is specified in OPSS 180. Suggestions related to this specification should be brought to MTO's Environmental Policy Office (EPO).</p>
330	ORBA	<p>Please find below, ORBA's comments in consultation(s) with Concrete Ontario and Cement Association of Canada:</p> <p>Overall Comment: Consideration should be given to implementing a flatwork certification program as is already</p>	<p>This is consistent with the current OPSS 351 Common (2015) which does not include requirements for ACI Flatwork Certification. The construction and quality assurance requirements of OPSS 351 are robust enough that the supplementary certification of personnel placing concrete sidewalk is not mandatory.</p>

		<p>implemented in OPSS.MUNI 350, 351 and 353 (Nov. '21)          More specifically implementing the Municipal Exterior Flatwork Certification for the Contractor's representative of the placing crew who shall be on site.</p>	
		<p>351.05.01 Concrete          Quote from Specification: a) The minimum specified 28-Day compressive strength shall be 30 MPa, or as specified in the Contract Documents.          Comment: Recommend following CSA A23.1 Class C-2 Exposure minimum strength requirement of 32 MPa.          Comment: This requirement does not meet the requirements of CSA A23.1 Tables 1 and 2 and should be 32MPa Class C-2. In addition, making this change would provide consistency with all current OPSS.MUNI specs.</p>	<p>This comment was submitted individually, please see response above to comment 321.</p>
		<p>351.05.02 Expansion Joint Material          Quote from Specification: Expansion joint filler material shall be asphalt impregnated fibreboard having a minimum of 12 mm thickness and shall be according to OPSS 1308 Type A          Comment: Expansion joint material should be made of a non-absorptive material to ensure they do not cause potential damage due to expanding during freeze thaw cycles.</p>	<p>This comment was submitted individually, please see response above to comment 321.</p>
		<p>351.06.02 Hand Finishing Equipment and Joint Tools          Quote from Specification: Floats and joint</p>	<p>This comment was submitted individually, please see response above to comment 321.</p>

		<p>tools shall be made of magnesium or wood.          Comment: Wooden floats should not be used on air entrained concrete as they are known to cause tearing of the concrete surface. The specification should state, floats should be made of magnesium.          Comment: Wood floats are known to tear the surface of air entrained concrete. Magnesium or Aluminum should be considered here. This is also consistent with OPSS.MUNI 351.</p>	
		<p>351.07.09 Placing of Concrete          Quote from Specification: When there is an interruption in placing concrete greater than 20 minutes, the surface of the concrete shall be covered with wet burlap.          Comment: Concrete sidewalks are typically cured using white pigmented curing compound so wet burlap is not required and would dilute the curing compound and decrease its effectiveness, if used.          Comment: Since sidewalks are typically cured with curing compound, is the wet burlap being applied on top of the curing compound? If the concrete sidewalk is already cured using curing compound, is there even a need to put wet burlap on top? In addition, the burlap needs to be presoaked for 24 hours, meaning it would have to be available at all times on site in case there is an interruption.          Recommendation is to include alternative</p>	<p>This comment was submitted individually, please see response above to comment 321.</p>

		<p>protection methods such as curing compound, poly and wet burlap as options for this clause or remove the requirement all together.</p>	
		<p>351.07.13.03 Contraction Joints          Quote from Specification: Contraction joints shall be placed at every third dummy joint and shall be sawcut or formed to a depth that is one quarter the thickness of the sidewalk.          Comment: Dummy joints are slowly being phased out on the Municipal side due to AODA requirements. Recommendation is to remove dummy joints and promote saw cuts exclusively.          Comment: Agree with comment above.</p>	<p>This comment was submitted individually, please see response above to comment 321.</p>
		<p>351.07.13.04 Expansion Joints          Quote from Specification: Expansion joints shall be filled with expansion joint material and shall be clean and dry at the time of construction.          Comment: Backer rods should be made of a non-absorptive material to ensure they do not cause potential damage due to expansion and contraction during freeze thaw cycles.</p> <p>Quote from Specification: Expansion joints shall be constructed where sidewalks abuts a rigid object or changes direction.          Comment: Due to the Climate Change temperatures are rising and staying higher for longer periods of time which causes increased expansion of the concrete sidewalk. Therefore, it would be</p>	<p>This comment was submitted individually, please see response above to comment 321.</p>

		<p>prudent to install some expansion joints on long sections of concrete pavement even if there is no change in direction or no rigid objects abutting up against the sidewalk.</p>	
		<p>351.07.21 Management of Excess Soils Quote from Specification: Management of excess material shall be as specified in the Contract Documents. Comment: Contaminated soils can be remediated in-place reducing excess soil and minimizing the projects carbon footprint. In-place stabilization also eliminates the potential hazard of hauling the contaminated material to another site.</p> <p>We also made revisions with an old version of OPSS 351 specification and made some suggested changes; please see attached.</p>	<p>This comment was submitted individually, please see response above to comment 321.</p>
314	Individual	<p>Consideration should be given to implementing a flatwork certification program as is already implemented in OPSS.MUNI 350, 351 and 353 (Nov. '21)</p> <p>More specifically implementing the <b>Municipal Exterior Flatwork Certification</b> for the Contractor's representative of the placing crew who shall be on site.</p>	<p>This comment was already submitted, please see response above to comment 321.</p>

	<p><b>351.05.01 Concrete</b></p> <p>a) The minimum specified 28-Day compressive strength shall be <b>30 MPa</b>, or as specified in the Contract Documents.</p> <p>This requirement does not meet the requirements of CSA A23.1 Tables 1 and 2 and should be 32MPa Class C-2. In addition, making this change would provide consistency with all current OPSS.MUNI specs.</p>	
	<p><b>351.06.02 Hand Finishing Equipment and Joint Tools</b></p> <p>Floats and joint tools shall be made of magnesium or <b>wood</b>.</p> <p>Wood floats are known to tear the surface of air entrained concrete. Magnesium or Aluminum should be considered here. This is also consistent with OPSS.MUNI 351.</p> <p><b>351.07.09 Placing of Concrete</b></p> <p>When there is an interruption in placing concrete greater than 20 minutes, the surface of the concrete shall be <b>covered with wet burlap</b>.</p> <p>Since sidewalks are typically cured with curing compound, is the wet burlap being applied on top of the curing compound? If</p>	<p>This comment was already submitted, please see response above to comment 321.</p>



		<p>the concrete sidewalk is already cured using curing compound, is there even a need to put wet burlap on top? In addition, the burlap needs to be presoaked for 24 hours, meaning it would have to be available at all times on site in case there is an interruption. Recommendation is to include alternative protection methods such as curing compound, poly and wet burlap as options for this clause or remove the requirement all together.</p>	
		<p><b>351.07.13.03 Contraction Joints</b>          Contraction joints shall be placed at every <b>third dummy joint</b> and shall be sawcut or formed to a depth that is one quarter the thickness of the sidewalk.</p> <p>Dummy joints are slowly being phased out on the Municipal side due to AODA requirements. Recommendation is to remove dummy joints and promote sawcuts exclusively.</p>	<p>This comment was already submitted, please see response above to comment 321.</p>

Comments received by email			
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