

<b>Title:</b>	500 MPa Steel Reinforcement - Structural Implementation
<b>Division:</b>	Transportation Infrastructure Management (TIM)
<b>Branch:</b>	Standards and Contracts Branch (SCB)
<b>Office:</b>	Structures Office
<b>Date:</b>	2022/03/14
<b>Theme(s):</b>	Design
<b>Distribution:</b>	<input type="checkbox"/> Internal Only <input checked="" type="checkbox"/> Approved for External Distribution  All  Manager, Highway Design Office Head, Standards Management Section
<b>Memo #:</b>	SCB-SO-2022-XX
<b>Approved by:</b>	
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">                     Walter Kenedi, Manager Structures Office                 </div> <div style="text-align: center;">                     Alain Beaulieu, Director Standards &amp; Contracts Branch                 </div> </div>	

**Implementation**

This memorandum is effective as of the date of issue:

**Background**

In July 2021, MTO made the decision to move from traditional 400 MPa steel reinforcement to 500 MPa, and this policy initiative was conveyed in Policy Memo SCB-SO-2021-03. This was done to optimize steel usage, reduce congestion, and allow for easier concrete placement.

The initial stage of the transition involves simply changing the steel grade on Structural Standard Drawings. Structures Office has gone through the various Structural Standard Drawings (SSDs) and confirmed there is no detrimental effect of using 500 MPa reinforcement on the drawings as currently designed. The drawings will be updated to include design according to 500 MPa reinforcement in the near future. The practice that existed previously of only using weldable grade of reinforcing steel for structural applications will be retained, and only Grade 500W being allowed. This memo provides guidance for designer to implement the policy on the structural portion of the contract during the transition period (approximately spring 2022 to 2024) until OPSS 1440 is updated and 500W reinforcement is fully adopted.

## Policy

1. Projects shall use CSA G30.18 Grade 500W, as determined by the Structural Section, using the guidance of Policy Memo SCB-SO-2021-03.
2. Where 500W reinforcement is used, the design shall take advantage of the higher yield strength of 500 MPa in proportioning the reinforcement size and spacing of all components not on the Structural Standard Drawings (SSDs).
3. For SSD's associated with the specific bridge, the designer shall change the Grade of rebar from 400W to 500W in the notes of the SSD to match that of the remainder of the bridge. The SSD shall be marked as "Modified", This modification in itself does not constitute a major change and this does not necessitate the need for the drawing to have a second engineering seal as per Structural Manual Section 1.1.8.
4. The designer shall change any OPSD or MTOD drawing directly related to the bridge from grade 400 to 500W. Since these types of drawings cannot be modified, they must be replicated in the structural design drawings with the revised steel grade.
5. A Special Provision modifying OPSS 1440 will automatically be included in the Contract to allow for the use of 500W steel, when specified directly on the Contract Drawings.