Ontario

Design Build 1350 (DB 1350) – Concrete – Materials and Production

Date: July 16, 2026

Comments received by TCP (20 comments received)**:**

Comment ID	Organization	Comment	Response
539	Individual	If the Ministry is looking to alienate more readymix suppliers, I believe the penalties embedded within the SP will do just that. We already have difficulty finding a readymix supplier willing to take on the risk and the onerous administrative needs that the MTO demands. Much like prestressed girders, you'll be down to one provider and paying 5x the true cost. Thank you for spending our tax dollars wisely.	The payment adjustments in DB 1350 have been revised to be consistent with OPSS 1350 (non-DB). Please see response to comment 555, below, for additional details.
540	Federal White Cement	Changes to the referee testing for RCP results will likely result in more rejections due to the shortened time frame and the larger difference from acceptance result. This is a concrete property that evolves with time, concrete is not given enough time to mature with the current test age - currently borderline results may have enough time to meet the requirement with a referee test. Is concrete that meets this limit at a slightly later age damaged significantly at	The time permitted to invoke referee testing has been revised to be consistent with OPSS 1350 and other specifications. The age of specimen at the time of testing impacts the results and referee testing should be done on samples of a similar age to those of the acceptance test. The RCP value specified by MTO reflects the age of testing (i.e. 28 days). Contractors have consistently demonstrated the ability to meet MTO requirements at the test age specified, using concrete mixes that comply with the SCM limits.

		the early age when typical best practices are to avoid exposure to chlorides at early ages? Additionally the MTO restricts the use of SCMs, allowing higher levels of SCMs will improve the RCP result of concrete in the longer term. There is very little that a supplier can do to improve the quality and ensure they will meet this requirement.	
541	Individual	For clause 1350.04.02.01.04, point c: This requirement is redundant with the documentation required to be listed on the CASL. These materials already would have demonstrated compliance with the requirements of OPSS 1002. An exception should be provided for aggregates that are on the current approved sources lists.	Submission of aggregate test data is required on a contract-specific basis to demonstrate that the aggregates continue to meet the requirements. The submission establishes project-specific aggregate property baseline.
542	Individual	1350.04.01.01.01 General Requiring that concrete be durable "including but not limited to resistance to salt scaling on concrete surfaces exposed to de-icers and/or anti-icers" is unreasonable. Scaling is as much a result of the environment and exposure conditions than it is a material property or issue. The higher the salt concentration, the more likely scaling tends to be. Scaling is also affected by the type of salt used as de-icer. Producers and Contractors cannot meet this requirement without information	This section has been modified to be consistent with the newly published SSP 113S12 (July 2026). Mix design supporting documentation is clearly outlined in Clause 1350.04.02.01.04, Mix Design Supporting Documentation. Agree, wording is less clear. Added that RMCAO certification be submitted annually. MTO's maximum specified slump, including tolerance, is 230 mm. Tolerances are

		about what salts will be used during the lifetime of the structure, what concentration, mode of application (rock or brine), a detailed test method and acceptance criteria for “adequate durability” among other factors that will affect scaling over the life of that concrete structure. As proposed, this clause reads like an arbitrary “blanket” clause, with no qualifying acceptance method. Such a clause can have a severe impact in the quantity and quality of bids on provincial work, going against the intent of the recent legislative changes in both “Protect Ontario by Building Fast and Smart Act”, and “Fighting Delays, Building Fast Act”. 1350.04.02.01.02 Changed to Mix Design Submission I suggest adding which forms need to be sent when there is a removal of a material from the mix. It currently only says “requires submission of a new mix design but does not require resubmission of mix design supporting documentation”. I suggest including in this paragraph which forms are required to be resubmitted. 1350.04.02.02 Certification of Ready Mixed Concrete Production Facilities The requirement for annual submission of a certificate was removed. The RMCAO certification is only valid for a year, therefore I suggest reinstating the requirement for yearly submission of the	appropriate. The Contractor identifies the target slump. Visual assessment is inherently hard to define. The requirement is that the Contractor actively assess the concrete visually to look for indication of excessive bleeding or segregation. Referee testing – please see response to comment 540 above. Penalties – please see response to comment 539, above and 555, below.

		certificate, or specifying a timeline for submission. 1350.05.04.02 Plastic Concrete Requirements The MTO approach to slump has a fixed variation of ±30 mm, which can make it challenging if the requested slump is high. Suggest adopting a second slump variation of ±40 when slump is above 180 mm, as already specified in CSA A23.1. 1350.07.05.06 Visual Acceptance of Plastic Concrete “The Contractor shall visually inspect plastic concrete during discharge and placement to identify the presence of any excessive bleeding, segregation or lumps”. What is considered “excessive bleeding”? This term is not defined anywhere else in the document. No test method or acceptance criteria is listed. Is this arbitrary to the Contractor to judge? And if it is, what are the requirements for whoever will judge this condition (certification or background otherwise), as they must do so visually. 1350.08.01.01 QUALITY ASSURANCE General Referee testing requests must be done within 3 business days under the new proposal, a reduction from 5 days on the current document. Referee testing is likely to be requested when there is the possibility of a remove	

		and replace order, potentially impacting schedule and cost to all parties involved. These decisions demand time and coordination between contractor, suppliers, and possibly CA/Owner. Reducing the allotted time to request referee testing may unnecessarily hinder this coordination. Is there a technical reason this reduction from 5 to 3 days was proposed, or is this change arbitrary? Tables 5, 6, 7, 8, and 9. Some of the penalties have been increased by more than 500%, is there a study or technical justification for these? While I understand that falling short on performance may come with financial penalties, some of these increases might be enough to drive away bidders to MTO work. This comment is related to my initial comment, in that some of the changes proposed by the MTO go against the intent of the recent legislative changes in both "Protect Ontario by Building Fast and Smart Act", and "Fighting Delays, Building Fast Act". It is my understanding that the Province is trying to cut red tape and allow faster construction, but if the new requirements in provincial specifications drive away potential suppliers, it goes against the recent push by the Province.	
543	Individual	I represent a concrete producer in the Ontario construction industry and would like to raise the following points of	Penalties – please see response to comment 539, above and comment 555 below.

		consideration with the Ministry related to the proposed changes highlighted in the draft Special Provision No. DBSP1350: 1. Tables 5DB to 9DB have been updated to reflect extremely large penalty amounts per m3. While I understand these were updated based on inflation, they appear to be quite excessive and there should be a further review and consideration for these very high amounts as they will restrict competition and lead to absurd inflationary unit pricing for concrete elements to address the risks of failure. 2. In light of the proposed astronomical increases in penalty amounts for failing a performance parameter, what is the Ministry's approach to ensure there is fair and proper evaluation of concrete samples at the chosen QA or referee labs. There is a sense in the industry that QA labs do not give MTO samples the level of care and diligence required when it comes to core extraction, proper transportation to the lab, demoulding, proper moist curing, preparation and evaluation of performance parameters. Given DB contracts evaluation is based on cores, the QA labs must adhere to the utmost levels of care and attention to detail when evaluating concrete samples while upholding concrete testing standards in the highest regard.	Quality assurance laboratories and referee laboratories are assessed and required to successfully participate in correlation programs. The referee process itself is intended to have a second laboratory test the same or duplicate specimens, where QA results are disputed. Salt-scaling resistance – please see response to comment 542, above. As was noted in your comment, multiple factors can affect salt scaling resistance, including mix design and workmanship. DB 1350 does not specify salt-scaling resistance testing as an acceptance test, however it is required that the mix be designed to be resistant to salt-scaling. Suppliers and contractors can determine how to ensure concrete is designed to be resistant to salt-scaling, and testing such as MTO LS-412 or similar tests could be performed.

		3. There is mention of designing concrete mixes to provide salt scaling resistance. Please note that concrete producer can provide mix designs with excellent salt scaling resistance as long as the contractor provides proper placement, consolidation, finishing and implements curing best practices to help the concrete build its strength and durability performance. For mix design acceptance, is there an expectation now that concrete mixes need to be pre-qualified for scaling resistance? If yes, what test method applies? Thank you for taking into account these comments and reviewing key concerns for fairness and equity in the construction industry.	
544		I represent a concrete producer in the Ontario construction industry and would like to raise the following points of consideration with the Ministry related to the proposed changes highlighted in the draft Special Provision No. DBSP1350: 1. Tables 5DB to 9DB have been updated to reflect extremely large penalty amounts per m3. While I understand these were updated based on inflation, they appear to be quite excessive and there should be a further review and consideration for these very high amounts as they will restrict competition and lead to absurd inflationary	Duplicate of comment 543.

		unit pricing for concrete elements to address the risks of failure. 2. In light of the proposed astronomical increases in penalty amounts for failing a performance parameter, what is the Ministry's approach to ensure there is fair and proper evaluation of concrete samples at the chosen QA or referee labs. There is a sense in the industry that QA labs do not give MTO samples the level of care and diligence required when it comes to core extraction, proper transportation to the lab, demoulding, proper moist curing, preparation and evaluation of performance parameters. Given DB contracts evaluation is based on cores, the QA labs must adhere to the utmost levels of care and attention to detail when evaluating concrete samples while upholding concrete testing standards in the highest regard. 3. There is mention of designing concrete mixes to provide salt scaling resistance. Please note that concrete producer can provide mix designs with excellent salt scaling resistance as long as the contractor provides proper placement, consolidation, finishing and implements curing best practices to help the concrete build its strength and durability performance. For mix design acceptance, is there an expectation now that concrete mixes need to be pre-qualified for scaling	

		resistance? If yes, what test method applies? Thank you for taking into account these comments and reviewing key concerns for fairness and equity in the construction industry.	
552	Individual	Clause 1350.07.04.02 Discharge Time When concrete or OGDL is transported by means of non-agitating equipment, discharge shall be completed within 30 minutes after introduction of the mixing water to the cement and aggregates. 30 minutes for OGDL is too narrow of a window, if there is any traffic, the trucks will be late. OGDL doesn't have a strength requirement and even if it did, it would be in the 1-5 MPa range at 7 days. It is a stabilized granular, it is not expected to have significant structural capacity. Even at 1 MPa it stronger than a Granular base. The structural layer coefficient is in the range of 0.2-0.27 (CPTechcentre Guide for FDR) but in the design manual we only use 0.14 for PC stabilized OGDL.	Discharge time of 30 minutes for OGDL in non-agitating equipment is a longstanding requirement. Portable plants can be used to meet this requirement.
558	Individual	Sorry for the delay, I hope my comments are considered. We have been working for MTO projects for many years, and we usually encounter additional challenges in MTO projects for the following reasons (some of them have	1) Slump tolerance of ± 20 mm before the addition of superplasticizer ensures excessive water is not added to the concrete. After the addition of superplasticizer, the specified tolerance for slump is ± 30 mm.

		been discussed already and there are plans address them) 1) Reduced slump range +- 20 in standard mixes (example 80+-20). This is too restrictive and increases risk for rejected loads. Using the standard range (80+-30) will create less issues on site and will not affect performance of concrete. MTO mixes are designed with very high overdesign. MTO projects have higher risk and rejected loads need to be reduced in possible, provided that performance is not affected. The overdesign of MTO mixes is generally 10-15 MPA. Setting the slump range to +-20 will not make any improvement and cause many issues. The rate of rejected loads in MTO is significantly higher than high risk private jobs. 2) Mixes with 30 and 35 MPa and RCP 2500 at 28 days. The requirement of RCP 2500 with 25% slag max forces us to increase cement content significantly more that required for 30 or 35 MPA. The average strength for those mixes in about 50MPA. If the request is RCP 2500 and 80+-20 slump, the mix becomes very unstable and difficult to adjust. Those mixes should be plasticized. 3) Form A and B should be revised and indicate RCP targets, to avoid misunderstanding. Form A and B needs to reflect all specs required for the mix	2) Superplasticizer may be used in all concrete. The Design Requirements section of DB 1350 states the following: *Superplasticizers may be used in other provided the superplasticized concrete meets the Contract requirements and there is no evidence of segregation or inadequate consolidation.* 3) Not every MTO concrete mix has an RCP requirement, although most do. The specification requirements are clear, and that is what governs. Do not see the need to put target RCP on the Form A and B. This could cause confusion if the target RCP is different that what is specified. 4) Yes, Type GUL is the most commonly used cement now. 5) Plant-added superplasticizer is at the concrete producer's/Contractor's option where RCP is a performance requirement. Where RCP is an acceptance requirement, the Contractor can add the superplasticizer at the batch plant or on site. Where RCP is not specified, superplasticizer must be added on site. This requirement has not changed. Most concrete used in MTO applications includes RCP as an acceptance requirement. 6) The discharge time of 90 minutes, or 60 minutes during hot weather, in DB 1350, is specified for the durability of structures

		4) GUL should be considered the default cement. Very few cement producers are still manufacturing GU. 5) OPSS 1350 is still requesting super P on site in some situations. The vast majority of concrete producers do not add super P on site and this is a reason for frictions with contractors. Reasons to avoid super P on site are as follows: • Manually handling admixtures should be always avoided due to safety reasons. We had incidents due to this in the past that could have been avoided with super P at the plant. • The addition of super P at the plant is more precise, and reduces the risk of contamination and human errors. • Super P added at the plant allows for traceability of all the constituents added to the trucks. • Super P added at the plant allows for better cement dispersion, resulting in better cement efficiency, lower RCP, better durability. • Super P at the plant improves slump retention, exceeding 2 hs hours, without affecting any of the concrete properties. • The addition of super P on site caused unnecessary delays on site that can be avoided adding super P at the plant. • Super P at the plant improves air control. Air is strongly correlated to slump and making a drastic change of slump on site usually have an impact on air.	exposed to a harsh environment, with a minimum expected service of 75 years. 7) DB 1350 specifies the following: *Retarding of concrete set shall be provided when specified in the Contract Documents. If no retarding of set is specified, retarders may be used to delay setting of concrete for a maximum of 3 hours. Longer periods of set retardation shall be used only when specified in the Contract Documents.* This means that the delay to the regular setting time, can be 3 hours. 8) MTO is currently looking into increasing the slag limit for buried elements not exposed to deicing chemicals, and not at risk of scaling and is open to proposals for trials for such applications. 9) There are 2 limits for RCP depending on whether silica fume is used. These are longstanding MTO requirements with demonstrated performance.

		6) Limiting to 90 min for acceptance of concrete adds unnecessary constrains. Concrete producers are accountable for performance and with current admixtures is easy to achieve 120 min of slump retention. 7) Normal initial setting time of concrete is 4-6 hours not 3 hs. We need to use accelerants in all our concrete if 3 hs setting time is required. Fast setting time is not advisable because risks of cold joints will increase. 8) To allow for better GHG, more supplementary materials needs to be allowed and 56 days should be accepted in some cases (depending on the element). 9) Changing the requirements of RCP automatically from 2500 to 1000 when SF is used is not beneficial for MTO since prevent using mixes with small amounts of SF in combination with slag. One good example are sidewalks in bridges exposed to freeze-thaw and deicing salts. We have mixes with low SF and low slag that meets requirements of C1 and with excellent resistance to scaling that cannot be used in MTO due to this clause. MTO is a very valuable customer and we want to provide the best quality as possible. Some of the rules in OPSS 1350	

		are an obstacle to provide the best quality, as expected by MTO. Thanks	
545	Left blank	**1350.03 – Definitions** Since this standard has now deleted the definition of "**High Strength Concrete**", does the definition included in CSA A23.1/.2 – 2024 now apply as per below? **8.5 High-strength concrete** 8.5.1 General High-strength concrete is defined as concrete having a specified compressive strength of at least 70 MPa at a specified age not exceeding 91 d.	No, the CSA definition does not apply. In MTO specifications, only terms used in the specification are defined. Since the term "High Strength Concrete" is not used in DB 1350, it was deleted.
546	Left blank	**1350.04.01.01.01 – General** The inclusion of the clause **"including but not limited to resistance to salt scaling on concrete surfaces exposed to de-icers and/or anti-icers"** introduces significant implications and concerns for concrete producers, as outlined below: • Salt scaling concerns have remained unresolved despite extensive discussion at ORBA Structures Committee meetings over the past three years. • Concrete producers are not licensed by Professional Engineers Ontario (PEO) to provide consulting engineering services and therefore cannot assess or	This addition was removed, consistent with the change made to non-DB 1350, through SSP 113S12.

		design for unknown winter maintenance practices used by the Owner. • The industry does not have knowledge of the specific de-icing or anti-icing materials, their chemical composition, application methods, or application rates, all of which significantly influence scaling performance. • It has been observed that certain de-icing chemicals used by Owners can chemically attack cement paste, further complicating the ability to ensure scaling resistance. • The specification does not define any acceptance criteria, test methods, or prequalification procedures for evaluating “resistance to salt scaling.” • Without defined testing or performance criteria, it is not possible for producers to provide reliable guidance or ensure long-term scaling resistance of concrete in service. • The requirement effectively obligates concrete to perform against any future de-icing product or practice selected by the Owner, creating an open-ended and unquantifiable risk. • This places responsibility on concrete suppliers for factors	

		outside their control and beyond their scope of work.	
547	Left blank	**1350.05.04.01 – General** The requirements outlined in this section regarding GWP reduction and environmental reporting raise several concerns for the ready-mixed concrete industry, as summarized below: • The ready-mixed concrete industry has been actively advancing Environmental Product Declarations (EPDs), with the first industry-average EPD published in 2017, followed by a second in 2022 transitioning to a regional approach that includes Ontario. Data collection for the third industry-average EPD has been completed, with publication anticipated in fall 2026. • The Global Warming Potential (GWP) reduction methodology outlined in this section **is highly prescriptive.** • This approach does not align with the Federal Treasury Board's methodology for measuring and quantifying GWP reductions in the construction sector. • The industry has made significant investments in developing product-specific Type III EPDs. • The industry would welcome the opportunity to discuss alignment of	MTO is open to discussions with industry regarding EPDs.

		methodologies and the use of EPDs in more detail.	
548	Individual	Ground granulated blast furnace slag or fly ash or a combination of the two materials and shall be restricted to the following proportions by mass of the total cementing material: a) Slag up to 25%. b) Fly ash up to 10%, except for silica fume overlays and HPC where up to 25% is permitted. c) A mixture of slag and fly ash up to 25%, except the amount of fly ash shall not exceed 10% by mass of the total cementing materials, in concrete other than silica fume overlays and HPC. For tremie concrete, the minimum cementing material content shall be 415 kg per cubic metre of concrete. • The specified limits on slag and fly ash content are highly prescriptive and restrict the ability to optimize concrete mixtures based on performance. • CSA A23.1 is fundamentally performance-based and allows flexibility in the selection and proportioning of supplementary cementing materials to meet specified durability and strength requirements. • Imposing fixed percentage limits on SCMs conflicts with the intent of CSA A23.1 and **may prevent the**	The maximum replacement levels of SCMs are specified to ensure long-term durability. It is well established knowledge that the increase in slag and fly ash content can negatively impact the salt-scaling resistance of concrete. This is of particular concern in Ontario highway infrastructure where de-icing salts are used to ensure public safety during the winter season. It is critical to take into consideration not only the initial GHG reduction but also the long-term sustainability and lifecycle achieved by durable and long-lasting infrastructure. MTO is currently looking into increasing the slag limit for buried elements not exposed to de-icing chemicals and not at risk of scaling and is planning to conduct trial(s). A non-standard special provision would be used for the trial(s). MTO uses Ontario Provincial Standard Specifications (OPSS) and ministry-specific special provisions in contract documents to specify concrete requirements in terms of strength and durability, which have been proven to result in strong and durable concrete for highway infrastructure applications.

		use of more sustainable and durable mix designs. • The restriction on combined slag and fly ash content, particularly limiting fly ash to 10% in most applications, is not aligned with current industry practices or CSA provisions. • The prescribed minimum cementing material content for tremie concrete further reinforces a prescriptive approach rather than allowing performance-based design in accordance with CSA A23.1. • **As this is a design-build standard, it is expected that CSA A23.1 governs material selection and mixture proportioning, with performance requirements taking precedence over prescriptive limits.** • Typical MTO prescriptive requirements should therefore be superseded by CSA A23.1 to allow innovation, optimize durability, and support GWP reduction objectives.	
549	Left blank	**1350.05.04.02 – Plastic Concrete Requirements** • The slump requirements in this section and Table 1DB are not aligned with CSA A23.1/.2 Clause 4.3.2.3.2. • The specified acceptance range is more restrictive than CSA	Please see response to comment 548, above.

		requirements without demonstrated benefit to concrete quality. • Narrow slump ranges can increase project risk and lead to higher costs due to unnecessary rejections or adjustments. • Slump selection should be the responsibility of the contractor based on the method of placement. • Once the slump is selected, field acceptance should follow the ranges defined in CSA A23.1 Clause 4.3.2.3.2. • As this is a design-build standard, it is expected that CSA A23.1 governs slump requirements, with performance requirements taking precedence over prescriptive limits. • Typical MTO prescriptive requirements should therefore be superseded by CSA A23.1 to allow innovation and optimal placement performance • **As this is a design-build standard, it is expected that CSA A23.1 governs**	
550	Left blank	**1350.06.02 – Delivery Equipment** The prohibition on the use of mobile mixers raises the following concerns: • The restriction is not aligned with current industry practices, where mobile mixers are widely used and accepted across North America, including in jurisdictions governed by CSA standards.	MTO is currently at the demonstration/trial stage looking at the use of mobile mixers for low-risk, low-cost, non-structural applications only. Mobile mixers are not being considered for structural applications. A prior trial of a mobile concrete mixer, witnessed by MTO, confirmed MTO's

		• Mobile mixers are capable of producing concrete that meets all CSA A23.1 requirements for quality, strength, and durability when properly operated and controlled. • Prohibiting mobile mixers limits flexibility in concrete supply, particularly for remote locations, small placements, or projects with variable demand. • Mobile mixers can enhance concrete quality by allowing fresh mixing at the point of placement, reducing the risk of slump loss, extended haul times, and retempering. • The restriction may lead to increased project costs and logistical challenges by limiting available supply options and requiring reliance on ready-mix trucks only. • There is no clear technical justification provided for excluding mobile mixers, especially when performance requirements (e.g., strength, air content, durability) can be verified through standard testing. • A performance-based approach, consistent with CSA A23.1, should be adopted, allowing any delivery method that can demonstrate compliance with specified requirements.	concerns with this technology and highlighted the need for more evaluation. MTO is open to contractor proposals to use volumetric mixers for a low-risk, low-cost, non-structural application on an MTO contract, e.g. noise barrier footings.

		• It is recommended that mobile mixers be permitted, provided they meet applicable CSA standards and quality control requirements.	
551	Left blank	**1350.07.04.02 – Discharge Time** The specified discharge time limits raise the following concerns: • The requirement to discharge concrete within 1.5 hours, and within 1 hour under elevated temperature conditions, is more restrictive than CSA A23.1, which permits longer discharge times provided the concrete maintains required properties. • CSA A23.1 takes a performance-based approach, allowing extended discharge times where concrete quality (e.g., slump, air content, temperature, and strength) remains within specified limits. • Fixed time limits do not account for the use of modern admixtures, such as set retarders and hydration stabilizers, which are specifically designed to maintain concrete workability and performance over longer periods. • The restriction does not consider project-specific factors such as haul distance, traffic conditions, or placement logistics, all of which can be effectively managed while still meeting CSA performance requirements.	CSA A23.1 specifies concrete for a broad range of applications. The discharge time of 90 minutes, or 60 minutes during hot weather, in OPSS 1350, is specified for the durability of structures exposed to a harsh environment, with a minimum expected service of 75 years. The reference to advanced admixtures is a topic area that MTO is interested in exploring further with industry.

		• Imposing rigid discharge times may lead to unnecessary rejection of compliant concrete, increasing material waste, cost, and environmental impact. • The shortened time limit under hot weather conditions duplicates controls already addressed through CSA requirements for temperature, consistency, and performance testing. • The clause shifts focus from measurable performance criteria to arbitrary time-based limits, which is inconsistent with the intent of CSA A23.1. • It is recommended that discharge time be governed by compliance with CSA A23.1 performance requirements rather than fixed maximum time limits, allowing flexibility while ensuring concrete quality.	
553	Left blank	**1350.08.01.01 General** • No technical justification has been provided for reducing the referee testing period from five days to three. • Shortening the timeframe limits effective communication and coordination between the general contractor, placing contractor, and concrete supplier. • The reduced window increases the likelihood of rushed decisions,	Please see response to comment 540, above.

		errors, and disputes during the testing process. • It may lead to higher project risk and increased costs due to constrained timelines for scheduling and completing referee testing. • The original acceptance thresholds for confirming referee test results were developed based on a five-day testing period. • Reducing the testing period by approximately 40% without adjusting confirmation criteria creates a misalignment in the acceptance framework. • This makes it more difficult to confirm referee test results, potentially leading to more rejections or disputes. • **Overall, the shortened timeframe introduces unnecessary risk without demonstrating a corresponding benefit to quality or project outcomes.**	
554	Left blank	**1350.05.04.02 Plastic Concrete Requirements** • The specified concrete temperature limits are more restrictive than those in **CSA A23.1 Table 14 Permissible concrete temperatures at placing** • The reduced upper temperature limits (25 °C and 28 °C) do not	Please see response to comment 548 above.

		account for the use of modern admixtures and mix designs that can maintain performance at higher temperatures. • These prescriptive limits may result in unnecessary rejection of compliant concrete that meets CSA requirements for strength, durability, and workability. • The requirement does not consider practical construction conditions, including ambient temperatures, haul times, and placement methods, which are addressed within CSA provisions. • Imposing stricter temperature limits may increase project costs, scheduling challenges, and potential material waste without demonstrated performance benefit. • **As this is a design-build standard, CSA A23.1 should govern material and performance requirements, allowing flexibility in achieving compliance.** • It is recommended that temperature requirements align with CSA A23.1 and be based on performance criteria rather than fixed prescriptive limits.	
555	Left blank	**Table 5DB** **Penalty for 28-Day Compressive Strength**	The penalties in DB 1350 have remained unchanged for many years, and because they are in $/m^3 of concrete, they had not

		• Increasing penalties for low compressive strength by a factor of 3.2 significantly elevates financial risk for both concrete producers and contractors. • Such penalties incentivize the supply of concrete with strengths well above specified requirements to mitigate risk. • **Overdesigning concrete mixtures typically requires higher cementitious content, which directly increases greenhouse gas (GHG) emissions.** • **This approach conflicts with the specification's stated objective of reducing GWP and promoting sustainable construction practices.** • The increased penalties shift the focus from performance-based compliance to risk avoidance, rather than optimizing material efficiency. • It may also discourage innovation in mix design, particularly the use of lower-carbon materials and optimized SCM contents. • Overall, the significant escalation in penalties introduces disproportionate risk without clear evidence of corresponding improvements in quality or performance.	increased as the item price increased over the years. The penalties were adjusted to be consistent with penalties for non-DB contracts, for the same acceptance test result. The numbers were adjusted based on average item prices for MTO contracts. For example, the non-DB OPSS 1350 penalty for RCP is calculated as follows: PR= lot quantity x (C−2500)/3 Where: PR = payment reduction of a lot ($) C = average rapid chloride permeability of a lot (coulombs) Lot quantity = volume of concrete in a lot (m3) For a failing QA test result of 3500 coulombs, the penalty in the non-DB would be **$333/m^3** of concrete, and the updated penalty in the DB 1350 is now **$300/m^3** of concrete. For a failing QA test result of 3000 coulombs, the penalty in the non-DB would be **$167/m^3** of concrete, and the updated penalty in the DB 1350 is now **$150/m^3** of concrete.

			Based on year end results, most contractors are meeting or exceeding the specified QA requirements, only a small percentage are subjected to penalties.
556	Left blank	**Table 6 DB** **Penalty for Air Void System Parameters of Hardened Concrete for Concrete Other Than Silica Fume Overlays and HPC** • Increasing AVS penalties by factors ranging from 3.6 to 7.9 significantly elevates risk for both concrete producers and contractors. • The magnitude of these penalties may exceed the value of the concrete supplied, creating disproportionate and difficult-to-manage risk exposure. • Based on industry feedback, contractors may respond by qualifying bids or modifying practices to manage this risk, rather than focusing on in-place performance. • There is a tendency to rely on concrete properties measured at the end of the chute instead of within the finished structure, which may not accurately reflect in-place conditions. • Elevated penalties reinforce risk-avoidance behavior rather than encouraging proper placement, consolidation, and curing practices.	Please see response to comment 555 above.

		• This approach shifts responsibility toward the supplier for factors beyond their control, including placement and finishing operations. • **Overall, the significant increase in penalties amplifies project risk without clear evidence of improved durability or performance outcomes.**	
557	Left blank	**Table 7 DB, Table 8DB and Table 9 DB** • Increasing RCP penalties significantly elevates risk for both concrete producers and contractors. • The magnitude of the penalties introduces disproportionate risk relative to the variability inherent in RCP testing. • RCP results are known to be sensitive to testing conditions, sample preparation, and curing, which can introduce variability beyond the control of the concrete supplier. • Elevated penalties may drive risk-avoidance behavior, such as overdesigning mixtures or prioritizing test outcomes over balanced performance. • There is a potential shift toward relying on early-age or laboratory-prepared samples rather than representative in-place concrete performance.	Please see response to comment 555 above.

		• The penalties place increased responsibility on the supplier for factors influenced by placement, curing, and site practices. • This approach emphasizes a single durability indicator (RCP), despite CSA A23.1 recognizing multiple approaches to assessing durability, including resistivity. • **Overall, the increased penalties amplify project risk without clear evidence that stricter RCP thresholds or penalties directly correlate with improved long-term durability in the field.**	

Comments received by email:

Number	Organization	Comment	Response
			No comments received by email.