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Ready Mixed Concrete Association of Ontario
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Supply Chain Disruptions in the Concrete Industry

Concrete is the most used construction material in the world and has resulted in a dramatic increase in our quality of life over the past 100 years, but it has a history going back thousands of years which is why the material is synonymous with both strength and durability.

From a ready mixed concrete perspective, our 90 concrete producing members operate 270 concrete plants in the province and utilize approximately 4,000 ready mixed concrete trucks to deliver 10 million cubic meters of ready mixed concrete to Ontario's critical infrastructure projects. Since ready mixed concrete typically only has a 120-minute shelf life from the time of initial batching until it must be completely unloaded from the concrete truck and placed in the formwork on the jobsite, our industry is a local industry that hires local workers to support the local construction economy.

Even though concrete is a local material, our industry is still not immune from the impacts of the global supply chain and the challenges that the world has been experiencing over the past two years.

Fortunately for the construction industry, demand has remained high for many sectors of the industry, and we have seen significant growth in infrastructure projects and residential housing demand that have resulted in overall construction growth over the past 18 months. This growth, combined with the challenges of COVID 19, have resulted in the following impacts to the concrete supply chain:

- **Cement Supply Constraints** – While Ontario has five active cement plants that produce the majority of the cement products for our industry, these plants and other plants located outside of Ontario also supply cement for the northern US marketplace, which also has been experiencing significant construction growth. Record demand, combined with COVID 19 supply chain issues, resulted in a situation in 2020 in Ontario that resulted in cement allocation when the demand for the product exceeded the actual quantity of material available and projects had to be delayed for days or weeks while the industry waited for more material to be produced. With increased demand in

2021, cement supply challenges were also encountered by our members, but project delays were typically limited to one or two days, not weeks. While the cement industry continues to work at maximum capacity over the winter to build up supplies for the 2022 construction season, demand in both Canada and the US is expected to increase significantly again over last year, so consistent supply remains a concern for the industry.

- **Supplementary Cementing Materials (SCMs) –** The Ontario ready mixed concrete industry remains a strong user of SCMs, and since there is an active steel industry in our province, slag cement remains the most common SCM that is used, but Silica Fume and small quantities of Fly Ash are used from time to time. Since most concrete specifications in Ontario follow the performance specification model in CSA A23.1, the concrete industry has been a major user of slag cement for the past thirty years, given the fact that this material reduces the permeability of the concrete and assists in higher strength development. Additionally, the recent focus on reducing the carbon footprint of all construction materials is further expanding the use of SCMs as a replacement for General Use (GU) cement since they have a much lower carbon footprint than the cement they replace. This situation is most likely going to result in a further increase in the demand for SCMs and we have already begun to see supply chain challenges related to the production of slag. Combine this with the abandonment of coal as a power source by many industries, new Fly Ash production is expected to reduce significantly moving forward and the industry is moving toward the reharvesting of materials that were placed in landfills in past years to address the needs of the concrete industry moving forward. Higher demand combined with the potential for reduced supply creates additional pressures around SCMs that the concrete industry will have to address.

- **Admixture Supply Constraints** – Ontario is again fortunate to have a number of high-quality admixture suppliers that support our industry both domestically and internationally. Similar to cement, admixture supply operates on a North American basis with significant cross-border shipments of materials. Additionally, some admixture products require highly specialized raw materials that must be sourced from international locations and these products have been hard to acquire during the past two years. High demand for items such as color and fibers for concrete have resulted in delivery times in excess of 6 to 8 weeks or more which is highly unusual for an industry that operates on lead times that were measured in hours or days previously and are now measure in weeks or months. Increasing global transportation costs and significant increases in shipping times continue to have impacts on the concrete industry.

- **Aggregate Supply Constraints** – While the aggregates that are used to support the Ontario concrete industry are typically supplied from local sources, supply chain challenges exist in the aggregate industry as well. These challenges include extensive lead times for crushing and screening equipment that is required to process the materials we require and long lead times on wear items that are required for daily operations. The other "**elephant in the room**" relates to strong public opposition to aggregate extraction permits, which is extremely confusing for us given the fact that aggregates are required by every municipality to maintain our existing infrastructure (roads, bridges,

schools, hospitals, homes, etc.), and even if the country suddenly adopted a zero growth strategy tomorrow, we still need this critical material to maintain our existing infrastructure and standard of living. As producers in the GTA have witnessed firsthand during the month of March, supply chain disruptions in the daily transportation of aggregates from the pits and quarries to the concrete plant can result in complete concrete plant shut downs in a little as one day.

- **Concrete Equipment Supply** – The ready mixed concrete industry is a capital intense industry with significant amounts of capital invested in both concrete plants and concrete trucks. Lead times for SPIF 22 trucks remain in excess of 12 months, and significant supply challenges exist in the electronic components required to operate low emission diesel vehicles. Combine this with the steel shortages and fabrication challenges associated with the production of the concrete mixers and we have a very significant bottleneck.

- **Labour Shortages** – While the concrete industry has been very fortunate to have strong growth over the past five to ten years, an ageing workforce and a significant challenge associated with attracting young workers to the concrete industry remains a major challenge for all concrete producers. While the association is actively engaging in marketing activities to attract new drivers to our industry and working with government to encourage new immigrants to see the great jobs that are available in our industry, labour shortages remain a significant concern for all members.

- **Increased energy impacts**. World events are currently highlighting the shortages of petroleum-based energy sources. Diesel fuel remains a significant cost component for both the transportation of the raw materials to the concrete plant and for the mixing and delivery of the concrete from the concrete plant to the jobsite. Factoring in world pricing volatility along with nationally planned carbon tax increases on this essential energy source for our industry will result in significant costs increases.

So, where does this leave us? There have been dramatic cost increases for all raw materials in all industries. This is combined with increasing global demand for concrete at a point in time when all industries have an ageing workforce and are struggling to attract new workers to their industry. Throw in energy uncertainty and inflation, and we have the construction environment that we see today where suppliers, sub-contractors and

general contractors are all unable or unwilling to enter into long term contracts or agreements due to the fact that they can't estimate how costs will change from week to week rather than from month to month or year to year. This is resulting in everyone in the supply chain adding in new limitations on pricing and immediately passing along the cost impacts that they are receiving from their suppliers which is resulting in associations like the Ontario General Contractors Association asking purchasers to consider the use of material price indexes or other tools to reduce the risks that they are facing when entering into projects greater than six months in length.

The bottom line is that everyone needs to spend more time managing their supply chains and that we are seeing significant changes to the way work is being bid, and contracts are being structured since our material suppliers are no longer able to hold pricing for periods of one year or more and that is creating similar challenges for our industry.

Welcome to the new normal.