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## ADDRESSING ISSUES AND CONCERNS OF THE CANADIAN CONCRETE MASONRY PRODUCERS

A monthly email will be forwarded to keep members informed of activities and important issues that are occurring. If you have some industry information you wish to share with CCMPA members, please forward it to the CCMPA Office by the 15th of every month.

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Canadian Concrete Masonry Producers Association Region 6 of the National Concrete Masonry Association

Undates

# What is CCMPA doing for you ?

#### **Upcoming Meetings:**

Wednesday, November 21st, 2012, CMDC Office —360 Superior Blvd, Mississauga, ON Friday, December 14th, 2012 — CCMPA Christmas Lunch—Alfredo's Ristorante—655 Dixon Road, Toronto, ON

### Annual General Meeting & Golf 2012

The 2012 AGM & CCMPA Stoneman Classic Golf tournament

The Raffle (An Air Canada Gift certificate worth \$2,500.00 was won by Bill DeGraaf of Permacon. Live Auction of a n autographed photo of Sidney Crosby's winning goal at the 2010 Winter Olympics was won by Dan Campbell. CCMPA would like to thank all the hole sponsors and event sponsors for making this an incredible day.

#### Awards

CCMPA was delighted to recognize three outstanding individuals who have been involved with the block industry for over 50 years. Congratulations to Carl Doughty—Doughty Block, John Grimo- Niagara Block, and Stanley Stankiewicz—Richvale York Block for Outstanding Achievement. A moment of silence was observed to honour Ray Gariepy, Jim Campbell and Rob Shouldice.

Paul Hargest—Boehmer's Block and President of CCMPA was awarded an Outstanding Contribution Award for his dedication to the Block Industry.

Photos of the event will be posted on the website shortly.

# 12th Canadian Masonry Symposium—June 2-5, 2013, Vancouver BC

The 12th Canadian Masonry Symposium will be held in Vancouver, Canada, June 2-5, 2013. It will provide an opportunity for researchers, practitioners and industry to share the latest knowledge on diverse aspects of masonry, including design, manufacturing, construction and restoration.

The symposium will serve as a forum for professionals from a broad range of disciplines, including engineers, architects, contractors, and manufacturers. This conference will provide a unique environment to facilitate synergy between masonry researchers and masonry practitioners from Canada and around the world. The symposium will build on the tradition and success of past Canadian Masonry Symposia, including the last symposium held in Toronto in 2009. www.cms2013.ca



# Getting the most from our Engineering Expert

Gary Sturgeon B.Eng., MSc., P.Eng.

Newsletter, October, 2012



#### ULC Design Numbers; Fire Resistance Ratings for Concrete Block Masonry Elements

Gary Sturgeon, B.Eng., MSc., P.Eng.

Many of you are aware that I've been handling technical support issues for the Canadian masonry industry in one capacity or another since 1991. Of course, I've had my fair share of "questionable questions", but one I received quite recently perhaps "takes the cake"...a real "gob smacker". It almost displaced my all-time favourite, "*Can I cut glass block masonry units to fit*?" However, in fairness to the inquirer, as I continued to pursue the issue, and peeled the layers off the onion, it became clear how it had rationally unfolded. In the specific case under question, a designer had imposed a requirement on the masonry contractor to set standard metric modular concrete block masonry units with a specified mortar joint thickness of 13 mm in order to achieve a wall construction having a 2-hr or 4-hr fire resistance rating.

Unfortunately, this most recent inquiry has some serious consequences for our industry, and in particular for CCMPA members who have secured the services of ULC, and rely upon ULC Design Nos. to demonstrate compliant fire rated concrete block masonry assemblies. Within these Design Nos., ULC specifically identifies the names of producers of compliant concrete block masonry units which, when included in the wall assembly in accordance with the prescribed requirements of the ULC Design No., provide the specified fire resistance rating for the assembly.

One of the more commonly used ULC Design Nos. is BXUVC.905, which prescribes a CMU wall having a 2-hr. fire resistance rating. All ULC Design Nos. are available on the ULC website and are in the public domain. No confidentiality is breached by excerpting and posting herewith:



Each of the components of the wall assembly are identified and prescribed, such as the CMU and the mortar, with some additional provisions for the construction. Of particular note are the requirements for the mortar:

*Mortar* – Blocks laid in full bed of mortar, 13 mm thick, of 3 parts of clean and sharp sand to 1 part Portland Cement (proportioned by volume), and 15% hydrated lime (by cement volume). Vertical joints staggered.

Other ULC Design Nos. also specify 13 mm joints. Of course, standard concrete block masonry is simply not constructed with 13 mm joints. CSA A371, "*Masonry Construction for Buildings*", requires the use of a 10 mm joint, with permissible tolerances of  $\pm 3$  mm. (Additionally, note that the specified mortar mix design is fundamentally a pure cement mortar, and is neither used nor recommended for use by our industry).

By the consultant demanding use of a 13 mm design width of joint, the masonry contractor cannot comply with the Building Code or CSA Standards. In this particular case, notwithstanding any rational discussion or direction provided by CCMPA, the designer was fully unprepared to modify the design and seek compliance from the Authority Having Jurisdiction unless a statement of clarification was provided by ULC permitting the use of a 10 mm joint; paperwork had to be completed to "right" an obvious "wrong". This undertaking was pursued by CCMPA to obtain the needed resolution for the contractor and for our CCMPA producer member.

Under the National Building Code of Canada and the Provincial Building Codes, the fire resistance rating of a masonry wall assembly can be determined, and compliance sought, using one of two compliance paths which are separate and distinct, with no interplay between them:

- 1. Assembly fire testing in accordance with ULC S101, with subsequent listing by ULC in a ULC Design No.;
- 2. Empirical calculation of the fire resistance rating using Appendix D of the Building Codes, where the Concrete Type and equivalent thickness of the CMU is used to establish FRR.

The designer was not prepared to explore the equivalent thickness compliance path which, most notably, fully acknowledges that the thickness of the masonry mortar joint is 10 mm!

There also exists a third compliance path. In the U.S., Underwriters Laboratories provides companion Design Nos. to those provided in Canada by ULC. In Canada, some Authorities Having Jurisdiction will permit the use of UL listings for compliance, providing that any materials or components identified by an asterisk in the UL Design No. comply with the ULC listing. Interestingly enough, the UL Design Nos. all specify a 3/8" joint rather than a 13 mm joint. Asterisks are typically only placed on the concrete block unit as one might reasonably expect.

During the resolution process for this particular project, CCMPA obtained a note of clarification from ULC to help resolve the issue. Alternatively, Appendix D or the UL compliance paths could have been followed.

What has been clearly demonstrated by this process is profoundly important to our industry. It has identified that the ULC masonry Design Nos. require updates and harmonization consistent with modern masonry construction standards. *Strictly following some of these ULC masonry listings results in constructed masonry that does not comply with good practice, that negatively impacts its relied-upon structural behaviour and water management capabilities otherwise provided, and that increases cost of masonry construction.* 

To this end, and by request of ULC, CCMPA has agreed to work with ULC over the coming months to modify these Design Nos. to help prevent unfavourable and clearly avoidable design or construction "incidents". *Specific to our members who have engaged the services of ULC, CCMPA urges these members to contact their ULC representatives to express their concerns and need for modification to these Design Nos.* This will provide support to the CCMPA initiative for change. Currently, these Design Nos. create contradiction and confusion for the users, require member products to be installed in a manner not recommended by the masonry industry, potentially compromise the performance of the masonry constructed with their units, and increase setting costs. That's not the service you paid for.

#### WESTERN CANADIAN MEETING — VANCOUVER 2013

The 2013 Western Canadian Meeting will be held in Vancouver BC and will directly follow the 12th Canadian Masonry Symposium in order to give members a good opportunity to attend both meetings. The CCMPA meetings will take place on Thursday, June 6th and Friday, June 7th 2013 at the Four Seasons Hotel, Vancouver. Members are encouraged to attend this meeting.

For more details about the 2013 meeting in Vancouver, BC, please contact M. de Souza

