



BUILDING CODE COMMISSION

IN THE MATTER OF Subsection 24(1) of the *Building Code Act*, S.O. 1992, c. 23, as amended.

AND IN THE MATTER OF Sentence 3.4.6.7.(1) of Regulation 403, as amended by O. Reg. 22/98, 102/98, 122/98, 152/99, 278/99, 593/99, 597/99 205/00 and 283/01 (the "Ontario Building Code").

AND IN THE MATTER OF an application by Harry Ziegler, Chief Engineer, Technical Coatings Co. Ltd., for the resolution of a dispute with Dan Mousseau, Chief Building Official, City of Burlington, to determine whether the as-constructed stairs that provide access to a mezzanine level in an industrial occupancy and having a minimum run of 229 mm (9 in), provide sufficiency of compliance with Sentence 3.4.6.7.(1) of the Ontario Building Code at Technical Coatings Co. Limited, 1164 Walkers Line, Burlington, Ontario.

APPLICANT	Harry Ziegler, Chief Engineer Technical Coatings Co. Ltd. Burlington, Ontario
RESPONDENT	Dan Mousseau Director of Buildings City of Burlington
PANEL	Kenneth Peaker, Chair Donald Pratt Gary Burtch
PLACE	Toronto, Ontario
DATE OF HEARING	November 8 th , 2001
DATE OF RULING	November 8 th , 2001
APPEARANCES	Wagdi Tadros, President Pyramids Engineering Inc. Richmond Hill, Ontario Agent for the Applicant
	J.T. Hewitson Building Inspector City of Burlington Designate for the Respondent

RULING

1. The Applicant

Harry Ziegler, Chief Engineer, Technical Coatings Co. Ltd., Burlington, Ontario, has received an Order to Comply under the *Building Code Act*, S.O. 1992, c. 23, as amended to remedy certain alleged deficiencies with respect to the interior stairs leading from the mezzanine area at Technical Coatings Co. Limited, 1164 Walkers Line, Burlington, Ontario.

2. Description of Construction

The Applicant is the Chief Engineer for Technical Coatings Co. Limited, a subsidiary of Benjamin Moore & Co. Limited. The subject building is classified as a Group F, Division 1, high hazard industrial occupancy. It has a total building area of 7572 m² and a building height of 1 storey. The structure is comprised of noncombustible construction and is fully equipped with sprinkler, fire alarm and standpipe and hose systems.

An addition has recently been constructed which includes a mezzanine area that serves as an access platform for the mixing tanks situated on the ground floor. The construction in dispute specifically involves the 5 stairways leading from this mezzanine. The metal stairways are 910 mm (3 ft) in width with an open riser design. The treads are comprised of serrated grating and the run of each stair measures 229 mm (9 in). The Code requires a minimum run of 255 mm (10 in) in this instance. Initially, the building's exterior stairs were also constructed with 229 mm (9 in) stair runs but have since been modified to comply to the Ontario Building Code (OBC) requirements. Because of physical constraints within the building, however, the Applicant would prefer not to modify the stairs from the mezzanine level.

3. Dispute

The issue at dispute between the Applicant and Respondent is whether the stairs to the mezzanine level with a run of 229 mm (9 in) per stair provide sufficiency of compliance with Sentence 3.4.6.7.(1) of the Ontario Building Code.

This provision in the code specifies that, except for situations not applicable here, the steps for stairs shall have a minimum run of not less than 255 mm (10 in) and not more than 355 mm (14 in) between each subsequent step.

The stairs to the mezzanine level for the subject building have a run of 229 mm (9 in). In recognizing this deficiency the Applicant has proposed certain compensating measures in an attempt to achieve sufficiency of compliance. These measures include additional stairways to the mezzanine level (all having stairs with a 229 mm run), improved lighting, extra safety features, serrated grating on the step tread and an open riser design.

4. Provisions of the Ontario Building Code

3.4.6.7. Treads and Risers

- (1) Except as permitted for *dwelling units* and by Sentence 3.4.7.5.(1) for fire escapes, steps

for stairs shall have a run of not less than 255 mm (10 in) and not more than 355 mm (14 in) between successive steps.

5. Applicant's Position

The Applicant's Agent acknowledged that the newly constructed stairs from the mezzanine did not comply with the present OBC requirements. There was apparently an oversight in the reading of the Code during the construction phase. In the previous edition of the OBC, a nine inch run was permitted. He emphasized, however, that in his opinion, the stairs were not unsafe. He suggested that the run of the stairs in the addition was consistent with the stairs in the original building and that all employees using the mezzanine were familiar and comfortable with this length of run. He further suggested that any hazard posed by the nonconforming stair runs would be diminished by the fact that there are 5 stair cases serving the mezzanine area while only 2 are required by the Code.

The Agent submitted that he has received advice from the Ministry of Labour suggesting that the run of the stairs could be considered acceptable from a safety standpoint. In addition he emphasized that, prior to the 1997 Code, a nine inch run was acceptable throughout the province. Numerous facilities have been constructed using this run dimension. He also stated that this design has been used elsewhere within Benjamin Moore facilities as well as in many industrial work platforms in the United States. While he acknowledged the present OBC requirements, he was confident that no hazard was created in the use of these stairs.

The Agent outlined several safety features that would support his proposal for a reduced run. He advised that the stairs have open risers which will provide for additional foot room on the tread. He also suggested that the serrated grating and static dissipating shoes required to be worn by all employees would decrease the risk of slipping on the stairs. He argued that the area is well lit and he offered to post signs in the area advising staff to make use of the handrails when walking on the stairs. It would be unlikely that workers would be carrying equipment onto the stair case and would, therefore, have their hands free at most times. The Agent also advised that the mezzanine is not a permanent part of the building. If Technical Coatings Co. Limited were to relocate the mezzanine would be disassembled. It is specific to the paint mixing operation being undertaken.

The Agent advised the Commission that the exterior stairs had been constructed using the same dimensions but have since been modified to a Code compliant design. It was recognized that the exterior stairs may, at times, be used by members of the public, however with respect to the stairs from the mezzanine, the Agent emphasized that only employees had access to this area. He also expressed concern about modifying the stair run in this area of the building. With an increased run, he argued, the stairs would extend into the floor area used by fork lifts, thus, posing more of a hazard for those using the stairways.

6. Respondent's Position

The Respondent submitted that a permit was issued in October 2000. The stairs were reviewed and found to be compliant at that time. Upon inspection, however, it was noted that, the uniform run for all stairs was nine to nine and a quarter inches.

The Designate recognized the safety measures being offered by the Applicant and conceded that the additional stairway exceed the OBC requirements, however, he submitted that the stair run is a minimum and, in his opinion, safety would be compromised by the reduction. He advised that one

could feel the difference between a nine inch and a ten inch run, particularly when descending a stairway.

In summation the Designate noted that the previous standard in the Code had been changed based on the findings of an accident study that was conducted. He also submitted that the National Building Code had increased the stair run requirement from nine inches to eleven inches. He suggested that these are significant amendments that should be considered when contemplating a reduction in the minimum requirement. He emphasized that the stairs are an integral part of the egress route and, by not complying with relevant, present day standards, the risk of hazard would be increased.

7. Commission Ruling

It is the decision of the Building code Commission that the as-constructed stairs that provide access to the mezzanine level in an industrial occupancy and having a minimum run of approximately 229 mm (9 in) do not provide sufficiency of compliance with Sentence 3.4.6.7.(1) of the Ontario Building Code at 1164 Walkers Line, Burlington, Ontario.

8. Reasons

- i) The stair run does not comply with the OBC provisions outlined in Sentence 3.4.6.7.(1) and, when considering the compensating measures to be provided, sufficiency of compliance has not been achieved.
- ii) The 1997 Ontario Building Code increased the minimum run requirement by 25 mm, from 230 mm to 255 mm. As noted in the technical background report submitted by the Building and Development Branch of the Ministry of Municipal Affairs and Housing, this amendment was a result of “extensive research into stair design and its impact on accidents and injuries on stairs”. In light of such a recent amendment, it would not be appropriate to revert back to a standard that was found to be unacceptable when the latest edition of the Code was published.

Dated at Toronto this **8th** day in the month of **November** in the year **2001** for application number **2001-58**.

Kenneth Peaker, Chair

Donald Pratt

Gary Burtch