

CAN/CSA-B44-11 – Safety Code for Elevators and Escalators Welding Requirements

This document provides an overview of the requirements of *CAN/CSA-B44-11 – Safety code for elevators and escalators* with respect to welding. It is designed to provide guidance for individuals and organizations involved in the design, construction, operation, inspection, testing, maintenance, alteration, and repair of the following equipment, its associated parts, and its hoistways, where located in or adjacent to a building or structure.

This document is only for general guidance purposes; reference to the full text of CSA B44 should be made. For further information, please contact the CWB at 1-800-844-6790 or info@cwbgroup.org.

Introduction

Welding is a key joining method used in the fabrication of elevators and escalators. To ensure welds of the highest quality and the safety of both the users of elevators, escalators and the general public, CSA Standard B44 provides specific requirements around the design, construction, testing, and maintenance of elevators and escalators, with awareness that the unit will be carrying people.

Welded Fabrication

CSA B44 provides the following requirements:

Part 6: Escalators and Moving Walks

Section 6.1 Escalators

6.1.3 Construction Requirements

6.1.3.10.1 Trusses and all supporting structures, including tracks, shall conform to the AISC Specifications for Design, Fabrication, and Erection of Structural Steel for Buildings, or the CSA Standard CAN/CSA-S16.1, whichever is applicable (see Part 9), based on the maximum static load calculated per 6.1.3.9.1.

Section 6.2 Moving walks

6.2.3 Construction Requirements

6.2.3.11.1 Trusses and all supporting structures, including tracks, shall conform to the AISC Specifications for Design, Fabrication, and Erection of Structural Steel for Buildings, or the CSA Standard CAN/CSA-S16.1, whichever is applicable (see Part 9), based on the maximum static load calculated per 6.2.3.10.1.

Section 8 Welding

8.8.1 Qualification of Welders

Where required elsewhere in this Code, welding of parts, except for tack welds later incorporated into finished welds, shall be undertaken

(a) by welders qualified in accordance with the requirements of Section 5 of ANSI/AWS D1.1, whereby the welders shall be qualified by a manufacturer or contractor; a professional consulting engineer; or a recognized testing laboratory; or

(b) by a fabricator qualified to the requirements of CSA W47.1, whichever is applicable (see Part 9).

8.8.2 Welding Steel

Where required elsewhere in this Code, welding shall conform to either of the following, whichever is applicable (see Part 9):

(a) shall conform to the design and procedure requirements of the applicable section of ANSI/AWS D1.1 or ANSI/AWS D1.3; or

(b) shall conform to the design and procedure requirements of CSA W59, whichever is applicable (see Part 9).



8.8.3 Welding Metals Other Than Steel

Where required elsewhere in this Code, welding of materials other than steel shall be done in accordance with the latest AWS or CSA requirements applicable to the specific materials used.

Part 9 Referenced Codes, Standards and Specifications

This Part covers the codes, standards, and specifications incorporated in this Code by reference and the specific editions that are applicable (see 9.1).

CAN/CSA Standard S16 Design of Steel Structures

CAN/CSA Standard W47.1 Certification of Companies for Fusion Welding of Steel

CAN/CSA Standard W59 Welded Steel Construction

CAN/CSA Standard G40.21 Structural Quality Steel

CSA Standard S16 requires all fabricators and erectors responsible for welding structures fabricated or erected under this Standard to be certified by the Canadian Welding Bureau to the requirements of CSA W47.1 (Division 1 or Division 2), CSA W55.3, or both, as applicable. Part of the work may be sublet to a Division 3 fabricator or erector; however, the Division 1 or Division 2 fabricator or erector shall retain responsibility for the sublet work.

CSA Standard W47.1 provides requirements for the qualification of welders and welding operators, welding procedures and welding supervisory and engineering personnel. A company certified to CSA W47.1 Division 1 requires having full time engineer(s) and a company certified to Division 2 requires having retained part time engineer(s).

CSA Standards W59 provides guidance on weld design, fabrication techniques, inspection and other key considerations around welding for steel and aluminum respectively.

CSA Standard W59 requires that contractors performing work under this standard be certified under the requirements of CSA Standard W47.1 unless the Engineer of record approves the contractor for the work to be undertaken.

An organization meeting the requirements of CSA Standard W47.1 will have qualified welders, accepted welding procedures and accepted supervisory/engineering personnel. All elements of the welding operation will be independently verified by the Canadian Welding Bureau on an on-going basis.

Please note that there are no domestic or international equivalents to CSA Standard W47.1. Other national systems, such as that of the American Welding Society (AWS) do not include key concepts such as independent and on-going verification and welding supervisors/engineers. Although CSA Standards B44.1 recommends alternative standards for welding, the CWB strongly cautions the reader around accepting substitutions; doing so may place public safety at risk.

For a listing of all organizations that currently meet the requirements of CSA Standard W47.1 and please see www.cwbgroup.org.

Welding Inspection

CSA Standard W59 requires that all welds be visually inspected. In addition, when required by contract weld inspection must be completed by certified welding inspectors or a welding inspection organization following the requirements of CSA Standard W178.2 or CSA Standard W178.1 respectively. It also requires that CSA Standard W59 be followed for the acceptance criteria for all welds. It should be noted that CSA Standard W178.2 has individual "product categories" that inspectors may qualify to, including one for CSA Standard W59.

For a listing of all organizations and individuals who currently meet the requirements of CSA Standard W178.1 and CSA Standard W178.2, please see www.cwbgroup.org.

