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Design, calculations, safety requirements, and test methods for mast climbing transport platforms (MCTPs)

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Technical Committee on Elevating Work Platforms

J.J. Wilkinson	Wilkinson Technical Services Inc., Oshawa, Ontario *Category: General Interest*	*Chair*
T. Groat	International Powered Access Federation (IPAF), Schenectady, New York, USA *Category: General Interest*	*Vice-Chair*
R. Balbaa	HITE Engineering Corp., Mississauga, Ontario *Category: General Interest*	
T. Ball	AGF Access, Cambridge, Ontario	*Associate*
S. Beekman	Beta Max, Inc., Palm Bay, Florida, USA	*Associate*
S. Beji	Pinguely Haulotte, Site de L'Horme, France	*Associate*
B. Bender	Melloul Blamey Construction Inc., Waterloo, Ontario *Category: User Management*	
J.C. Berry	Terex Corporation, Redmond, Washington, USA	*Associate*
J. Blair	Ontario Masonry Contractors' Association, Mississauga, Ontario	*Associate*
B.J. Boehler	Skyjack Inc. Elevating Work Platforms, Guelph, Ontario *Category: Producer Interest*	
C. Bourassa	Montréal, Québec *Category: General Interest*	
D. Bourgault	Fraco Products Limited, Saint Mathias-sur-Richelieu, Québec	*Associate*

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P. Bourque	WorkSafeNB, Dieppe, New Brunswick *Category: Regulatory Authority*	
A.L. Brisson	Jade Plus Inc., Tillsonburg, Ontario	*Associate*
M. Chan	Technical Standards & Safety Authority, Toronto, Ontario *Category: Regulatory Authority*	
M. Davis	Genie Industries, Redmond, Washington, USA	*Associate*
V. Dequoy	Hydro Mobile, L'Assomption, Québec	*Associate*
L. Desbois	Protection Contre Les Santé-Sécurité, Longueuil, Québec *Category: General Interest*	
J.F. Desmarais	CNESST, Montréal, Québec	*Associate*
G. Drewes	International Brotherhood of Electrical Workers Local 402, Thunder Bay, Ontario *Category: User Labour*	
M. Eckstine	Haulotte Group, Virginia Beach, Virginia, USA *Category: User Management*	
R.J. Foran	Foran's Training Inc., Hamilton, Ontario *Category: User Management*	
B. Freese	Haessler Inc., Guelph, Ontario	*Associate*
A. Saroor	Ontario Ministry of Labour, Peterborough, Ontario	*Associate*

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J. Gordon	Klimer Platforms Inc., Milton, Ontario *Category: Producer Interest*	
W. Haessler	Haessler Inc., Guelph, Ontario	*Associate*
R. Harpin	Local 89 — U.I.C.A. — I.U.E.C., Montréal, Québec *Category: User Labour*	
R. Hopkins	Infrastructure Health and Safety Association, Mississauga, Ontario *Category: General Interest*	
G. Isaac	Acuren Group Inc., Richmond, British Columbia	*Associate*
G.E. Janda	Alimak Hek Inc., Dallas, Georgia, USA	*Associate*
R.F. Jeffreys	Ontario Ministry of Labour, Hamilton, Ontario *Category: Regulatory Authority*	
H. Jenkins	Terex Corporation, Redmond, Washington, USA *Category: Producer Interest*	
L.A. Kavelman	Haulotte North America, Archbold, Ohio, USA	*Associate*
J. Klassen	Langley Utilities, Bowmanville, Ontario	*Associate*
D.J. Krieg	United Association Local 666, Thorold, Ontario *Category: User Labour*	
M. Leone	Procon Niagara, Welland, Ontario	*Associate*
B. Lowe	WorkSafeBC, Vancouver, British Columbia *Category: Regulatory Authority*	

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T.J. McCarty	JLG Industries Inc. an Oshkosh Corporation Company, Hagerstown, Maryland, USA	*Associate*
I. McGregor	Skyjack, Guelph, Ontario	*Associate*
G. Melius	JLG Industries Inc. an Oshkosh Corporation Company, Hagerstown, Maryland, USA *Category: Producer Interest*	
V. Moffat	AGF Access Inc., London, Ontario	*Associate*
R. O'Neil	3M Company, Airdrie, Alberta	*Associate*
T. O'Reilly	Safway Services Canada ULC, Toronto, Ontario *Category: Producer Interest*	
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J. Ouellet	CNESST, Montréal, Québec *Category: Regulatory Authority*	
O. Passos	LIUNA — Local 506 Training Centre, Richmond Hill, Ontario *Category: User Labour*	
B. Pringle	BACU Local 5, London, Ontario *Category: User Labour*	
S. Trudel	Hydro Mobile, L'Assomption, Québec *Category: Producer Interest*	
F. Villeneuve	Fraco Products Limited, Saint Mathias-sur-Richelieu, Québec *Category: Producer Interest*	
J.T. Vo	Ontario Ministry of Labour, Mississauga, Ontario	*Associate*

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S. Wahabi	Mississauga, Ontario	*Associate*
L. Webber	Terex Corporation, Redmond, Washington, USA	*Associate*
J. Wierzbicki	Canada Masonry Design Centre, Mississauga, Ontario *Category: User Management*	
O. Simonetta	CSA Group, Toronto, Ontario	*Project Manager*

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Preface

This is the first edition of CSA B354.12, *Design, calculations, safety requirements, and test methods for mast climbing transport platforms (MCTPs).*

With respect to design and manufacturing criteria, this Standard is closely harmonized with the equivalent ANSI A92.10, *Elevating work platforms — Mast-climbing transport platforms*.

This Standard was prepared by the Technical Committee on Elevating Work Platforms, under the jurisdiction of the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
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   b) *provide an explanation of circumstances surrounding the actual field condition; and*
   c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

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   a) *Standard designation (number);*
   b) *relevant clause, table, and/or figure number;*
   c) *wording of the proposed change; and*
   d) *rationale for the change.*

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B354.12-17
Design, calculations, safety requirements, and test methods for mast climbing transport platforms (MCTPs)

1 Scope

1.1 General

This Standard applies to mast-climbing transport platforms (MCTPs) that are considered tools of the trade and are used to vertically transport material and authorized persons to specified access levels on a structure during construction, renovation, maintenance, and related activities. The platform operates at a limited speed and minimum safe distance from the structure.

This Standard is to provide requirements for the design, manufacturing, remanufacturing, rebuilding/ reconditioning, and testing criteria for mast-climbing transport platforms.

This Standard specifies particular safety requirements for mast climbing transport platforms (MCTP).

This Standard is applicable to transport platforms with a combination of the following:
a) one or more masts;
b) masts that are tied or untied;
c) masts of fixed or variable length;
d) masts that are vertical or inclined between 0° and 30° to the vertical;
e) masts which are standing or hanging;
f) platforms with a movable or static base (chassis or base frame);
g) platforms with a mechanical drive system using rack and pinion, screw drive, or ratchet drive;
h) platforms that are driven using electric, hydraulic, or internal combustion engines; and
i) platforms that have an elevating mechanism that is manually or power operated. Raising and lowering speeds are limited to a maximum of 0.20 m/s (0.8 ft/s).

1.2 Purpose

The purpose of this Standard is to specify the minimum requirements for the establishment of criteria for the design, manufacture, remanufacture, rebuild/recondition, testing, and performance in order to achieve the following objectives:
a) assist in the prevention of personal injuries and accidents;
b) uniformity in ratings; and
c) understanding by manufacturers, dealers, installers, maintenance personnel, operators, owners, and users of their respective responsibilities.

Note: *Transport platforms are generally intended to be set up on level surfaces. Normally, they are not insulated for use near electrically energized circuits, nor are they intended to be used in hazardous locations. The operation of any transport platform is subject to certain hazards that can only be protected against by a competent person trained in the intended use, safe operation, maintenance, and service of this type of equipment.*

Also, the provisions of this Standard are not intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety to

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those prescribed by this Standard, provided that there is technical documentation to demonstrate the equivalency of the system, method, or device.

Note: *Authorities having jurisdiction might permit variations to this Standard provided that technical documentation or physical performance verification can assure the safety equivalence of such modifications to the corresponding requirements of this Standard.*

1.3 Application

This Standard should be used to guide a qualified designer for MCTPs manufactured after the date of publication.

This Standard identifies the hazards arising during the various phases in the life of such equipment and describes the methods for elimination or reduction of these hazards.

This Standard does not specify the requirements for dealing with the hazards involved in the maneuvering, erecting or dismantling, fixing, or removing of any materials which are not part of the MCTP. It also does not deal with the handling of specific hazardous materials.

1.4 Equipment not covered

This Standard does not apply to

a) mast climbing work platforms in accordance with CAN/CSA-B354.5;
b) goods hoists in accordance with CSA Z256;
c) passenger/goods hoists in accordance with CSA Z185;
d) mobile elevating work platforms in accordance with CSA B354.6, B354.7, and B354.8;
e) mobile cranes such as those covered in CSA Z150;
f) permanently installed (non-mobile) elevating lifts used to transport personnel between different elevations; and
g) firefighting equipment.

1.5 Terminology

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

1.6 Measurement

The values given in SI units are the units of record for the purposes of this Standard. The values given in parentheses are for information and comparison only.

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2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.

CSA Group

CAN/CSA-B354.5-07 (R2016)
Mast-climbing work platforms

B354.9-17
Design, calculations, safety requirements, and test methods for mast climbing work platforms (MCWPs)

B354.13/B354.14-17
Safe use and best practices for mast climbing transport platforms (MCTPs)/Training for mast climbing transport platforms (MCTPs)

C22.1-15
Canadian Electrical Code, Part I

CAN/CSA-C22.2 No. 60065:16
Audio, video and similar electronic apparatus — Safety requirements

CAN/CSA-C22.2 No. 60529:16
Degree of protection provided by enclosures (IP Code)

O86-14 (R2006)
Engineering design in wood

S16-14
Design of steel structures

S157-17/S157.1-17
Strength design in aluminum/Commentary on CSA S157-17, Strength design in aluminum

W47.1-09 (R2014)
Certification of companies for fusion welding of steel

W47.2-11 (R2015)
Certification of companies for fusion welding of aluminum

W59-13
Welded steel construction (metal arc welding)

W59.2-M1991 (R2013)
Welded aluminum construction

Z150-16
Safety code on mobile cranes

CAN/CSA-Z185-M87 (R2016)
Safety code for personnel hoists

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