

Skid Steer Safety on Pedestrian Surfaces

Work Securely on Grates and Sidewalks by Understanding Your Jobsite Load Capacities

By Michael A. Fiore

Skid steer loaders provide great maneuverability and power within a compact frame, making them useful in urban settings. Many urban property owners, property management companies, contractors and municipalities use skid steer loaders to clear snow and sweep sidewalks, as well as to complete other landscaping and construction tasks with a variety of attachments.



Before using a skid steer on any public or private pedestrian way that has hollow sidewalks or sidewalk grates, it is essential to make sure that the systems in place were designed to support these loads.

In urban areas where space is limited, many property owners try to use all available space — even the areas below sidewalks. Access grates within sidewalks and or hollow sidewalks (also called vaults) are sometimes created when these areas are utilized.

Before using a vehicle on any public or private pedestrian way that has hollow sidewalks or sidewalk grates, it is

essential to make sure that the systems in place were designed to support these loads. Older grate and hollow sidewalk systems could be of concern because they might have been built to load capacity requirements that did not take into consideration certain loads, such as skid steers and other heavy compact equipment. In addition, older grates may have corroded structural supports that are not visible without performing structural inspections.

The Massachusetts Department of Public Health, in cooperation with the National Institute for Occupational Safety and Health (NIOSH), conducts investigations of work-related fatal injuries through the Massachusetts FACE (Fatality Assessment and Control Evaluation) project. The goal of the FACE project is to prevent fatal occupational injuries across the state and nation by conducting investigations to identify the contributing factors of the incident. Then FACE will help in the development and use of improved safety measures for preventing occupational injuries in the future.

Massachusetts FACE conducted an investigation into the work-related fatality of an auto mechanic for a local hospital who was fatally injured while using a skid steer loader to clear snow during a blizzard. The victim was clearing snow from a sidewalk, owned by the hospital, when the skid steer broke through a ventilation shaft sidewalk grate. The victim and the skid steer fell approximately 20 ft to the bottom of the ventilation shaft. The force of the skid steer loader hitting the bottom of the shaft caused the victim's head to strike the back of the operator's seat. The victim was in the ventilation shaft for approximately two hours before co-workers discovered him.

The sidewalk grate and connecting shaft were originally constructed as part of a ventilation system for a transformer. At the time of the accident, the sidewalk grate and shaft were no longer being used for their original function, but had been incorporated into the heating, ventilation and air conditioning system for the hospital. It was determined after the accident that some of the bolts that held the grate's supporting structure were corroded.

Recommendations

To prevent similar accidents, employers, property owners and municipalities with sidewalk and roadway grates on their property should:

- Know the intended load capacities for the grates
- Maintain current engineering drawings for the grates that reflect as-built conditions
- Check cities or towns for local regulations and building codes that pertain to grate systems and heavy equipment use on sidewalks
- Have registered professional engineers conduct routine structural inspections of the grates
- Develop preventive maintenance schedules for the grates
- Consider redesigning grate systems that currently lack redundant supporting mechanisms
- And explore the possibility of eliminating or reducing the size of older grates when the original function of the system that the grate was part of has been eliminated, changed or updated.

In addition, in this accident the victim was working alone in extreme weather conditions. Employers should develop, imple-

ment and enforce communication protocols, such as routine personnel checks every 30 minutes via radio or in person to enhance safety of employees who are assigned to tasks that involve working alone in extreme weather conditions.

This article was based on a FACE Facts sheet that can be found along with other materials on the Massachusetts Department of Public Health's Web site at www.mass.gov/dph/bhsre/ohsp/ohsp.htm.

References:

1. Code of Federal Regulations, 29 CFR 1910.22, General requirements, Government Printing Office
2. Code of Federal Regulations, 29 CFR 1910.23, Guarding floor and wall openings and holes, Government Printing Office
3. United States, Department of Labor, Occupational Safety and Health Administration, Safety and Health Information Bulletins, Hazard of Potential Sidewalk Grate System Failure, SHIB 12-30-2004. Web: www.osha.gov/dts/shib/shib123004.html

Michael A. Fiore is the Massachusetts FACE project director, Occupational Health Surveillance Program, Massachusetts Department of Public Health, Boston.



Keep a look out for safety signs.



Know the intended load capacities for grates and have registered professional engineers conduct routine structural inspections of the grates.

The Complete Guide to the Dynamic Skid Steer and Compact Equipment Market

October 2005

Compact Equipment™

Breaking in a New Backhoe Loader

Learn How to Pick the Perfect
Combination for Digging,
Loading and Performance

Snow Your Truck Plows
Prepare Your Power Sources
for Hurricane Season

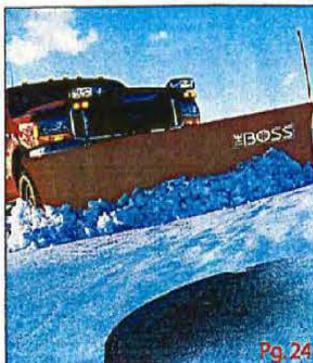
OEM Spotlight — Engines,
Trencher Chains and More

compactequip.com

Compact Equipment

Promoting the use of compact equipment by the owner/operator and business professional in the commercial, private and rental markets

VOLUME 4 • NUMBER 10 • OCTOBER 2005 • COMPACTEQUIP.COM



Pg. 24

18 Breaking in a New Backhoe Loader By Keith Gribbins
Learn how to pick the perfect combination for digging, loading and performance.

24 No More Snow Days By Katherine Fulton
Equipped with the proper truck plow, beat back the white stuff this winter weather season.

28 Snow Equipment Showcase By Keith Gribbins
Get ready for winter weather work with these great seasonal attachments and equipment.

32 Purchasing a Portable Generator By Eric Morse
Powering up for peak tropical storm and hurricane season.

OEM Spotlight:

36 Skid Steer Power Plants By Kelly Moore
Understanding your skid steer's engine can help you operate and maintain your compact machine like a pro.

39 Picking the Correct Cutter System By Tim Passon
Dig with efficiency — match your trencher chain to your attachment and application.

42 OEM Product Spotlight By Keith Gribbins
The latest pieces, parts and accessories from the original equipment manufacturers.

44 EXPO 2005 Compiled by CE Staff
With a new facility, new programs and added value — the International Lawn, Garden & Power Equipment Expo is set for Oct. 14-16.



COMPACT EQUIPMENT (ISSN 1552-1281) is published monthly with an Attachment Buyer's Guide in January by Benjamin Media, Inc. 1770 Main Street, PO Box 190, Peninsula, OH 44264. Copyright 2005, Benjamin Media, Inc. All rights reserved. No part of this publication may be reproduced or transmitted by any means without written permission from the publisher. One-year subscription rates, complimentary in the United States and Canada. Single copy rate \$10.00. Subscriptions and classified advertising should be addressed to the Peninsula office. Personal postage paid at Peninsula, OH and additional mailing office. POSTMASTER: send address changes to COMPACT EQUIPMENT, 1770 Main Street, PO Box 190, PENNSYLVANIA, OH 44264 USA.

Canadian Subscriptions: Canada Post Agreement Number 40040393 Send change of address information and blocks of undeliverable copies to: PO Box 1051, Fort Erie, ON L2A 6C7

Departments

6 Editor's Message

8 CE News

12 **Market Watch:** Oil, Gas and Steel Costs Are Driving Price Increases for Construction

16 **Talking Shop:** The OILS Method of Preventative Maintenance

46 **Safety Focus:** Skid Steer Safety on Pedestrian Surfaces

50 **Truck Stop:** Isuzu N-Series Trucks

51 **Truck Stop:** 2006 Nissan Titans

51 **Truck Stop:** 2006 Chevrolet Avalanche

58 E-Biz

58 CE Advertiser's Index



Pg. 16