

# **UL 583**

# **DESIGN TO COMPLIANCE**

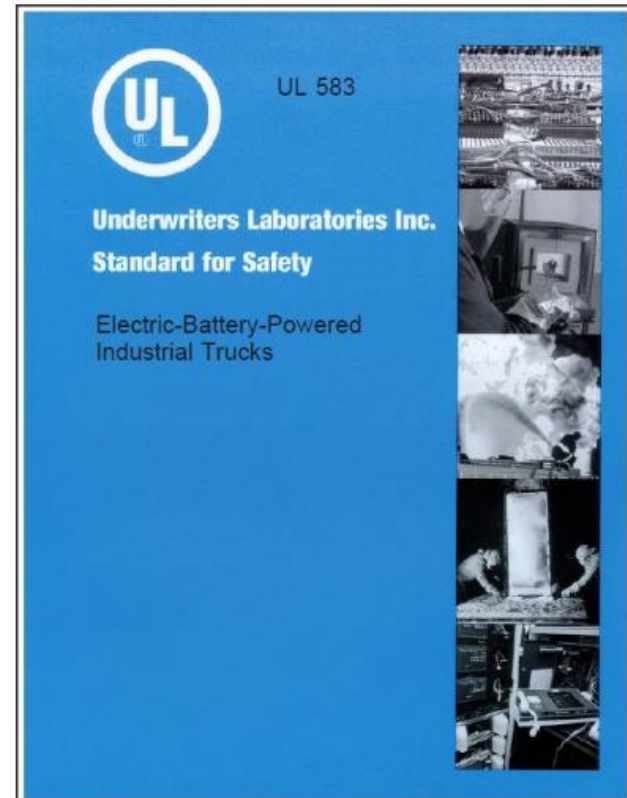


**Sebastiano Barresi**

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# AGENDA

- ✓ Scope
- ✓ Construction requirements
- ✓ Performance



# NFPA 505:2013



## NFPA 505

### Fire Safety Standard for

# Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations

**1.3.4** The approved powered industrial trucks addressed in this standard are trucks that are listed by a testing laboratory for the use intended and shall be tested and labeled in accordance with ANSI/UL 558 or ANSI/UL 583.



# UL 583: SUPPLEMENT SB1

Std. requirements cover electric-battery-powered cleaning machines such as buffers, scrubbers, sweepers, extractors, and polishers for industrial/commercial use.



- And Components



Motors



Controllers



Accessories

# UL 583: SUPPLEMENT SB1

do not cover:

✓ Not electric-battery-powered cleaning machines



✓ internal combustion engine powered cleaning machines (UL558)



✓ Household

✓  $V > 150 \text{ Vdc}$



# UL 583: CLAUSE 1.1 – REFERRED HAZARD



## Risk of Fire

- Temperature
- Flammability

## Risk of Electric Shock

- Accessibility of live parts
- Insulation reliability

## Risk of Explosion

- Spark injection
- Temperature injection

# UL 583: CONSTRUCTION REQUIREMENTS

These requirements cover electric powered industrial cleaning machine with respect to a risk of fire, electric shock, and explosion.

TYPE \_

**E**



**Safeguards for  
normal  
application**

**Inside/outside**

**Type ES: additional safeguards to  
the electric system to prevent the  
emission of hazardous  
Sparks.**

**Type EE: completely enclosed**

**Hazardous  
Location**



# UL 583: CONSTRUCTION REQUIREMENTS

Some example:

Clause 8.1: All electrical parts shall be mounted within the body of the truck.

Clause 14.8: The probe “PA100A” shall be applied to any depth that the opening will permit.....



Clause 15.3: Fuel cells shall comply with the requirements in the Standard for Fuel Cell Power Systems for Installation in Industrial Electric Trucks, UL 2267.

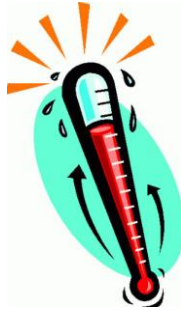
Clause 19: A Low-Voltage Limited Energy Circuit is considered.....





# UL 583: PERFORMANCE

- Temperature tests



in normal operation

- Dielectric Voltage Withstand



- Abnormal operation / Arc-Rupturing / Burnout

- Others Tests: -UL 746C - 12 mm (1/2 inch) flame test  
-Ball Impact test Ø101.6mm, 4,5kg, 3m



# UL Certification Programs

## Kickoff meeting

**Design  
Support**



**Training**





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