

**SPECIFICATION  
FOR  
MACHINES, FLOOR, BURNISHERS, ELECTRIC AND BATTERY**

(This specification is released for procurement purposes until amended, rescinded, or formally approved.)

**SCOPE**

This specification covers the requirements for electric and battery powered burnishers. They are primarily intended for indoor use over tile floors. It is not intended to cover all sizes and types commercially available, but only those considered most applicable to the needs of state agencies and institutions.

**I. CLASSIFICATION**

This specification covers electric and battery powered burnishers. Burnishers covered by this specification shall be classified within the classes listed in Table 1.

**Table 1. REQUIREMENTS**

| Product Class | Machine Type    | Max. Bell Housing Size (O/D) (in) | Min. Brush Spread Width (in) | Min. Brush Motor (rated hp) | Min. Brush Speed (RPM) | Min. Basic Unit Weight <sup>1</sup> (lbs) |
|---------------|-----------------|-----------------------------------|------------------------------|-----------------------------|------------------------|---|
| 1             | Electric cord   | 24                                | 20                           | 1.5                         | 1500                   | 70  |
| 2             | Electric cord   | 24                                | 20                           | 1.5                         | 2000                   | 75  |
| 3             | Electric cord   | 24                                | 20                           | 1.5                         | 2400                   | 75  |
| 4             | Battery powered | 24                                | 20                           | 2.5                         | 1500                   | 325                                       |
| 5             | Battery powered | 24                                | 20                           | 2.5                         | 2000                   | 325                                       |
| 6             | Battery powered | 24                                | 20                           | 2.5                         | 2400                   | 325                                       |

**NOTE 1:** Basic unit weight includes pad holder assembly and batteries if applicable.

**II. APPLICABLE STANDARDS**

The following document of issue in effect on the date of the Invitation for Bid shall form a part of this specification:

Battery Council International  
401 North Michigan Avenue, 24th Floor  
Chicago, Illinois 60611-4267

OSHA Regulations 29 CFR Occupational noise exposure §1910.95  
Federal Occupational Safety and Health Act (OSHA)  
U.S. Department of Labor  
200 Constitution Avenue N.W.  
Washington, D.C. 20210

Underwriters Laboratories, UL 561 Standard for Floor Finishing Machines  
and UL 583, Standard for Electric-Battery-Powered Industrial Trucks as applicable.  
Underwriters Laboratories, Inc.  
333 Pfingsten Road, Northbrook, IL 60062-2096

### III. REQUIREMENTS

#### A. GENERAL

##### 1. Standard Product

Products are not acceptable if they deviate from the specifications in the manufacturer's respective published literature or if they deviate from the manufacturer's standard production practices (the latter requirement applies where specifications for the particular characteristic in question are not published). The only exceptions to these requirements for a "standard product" are in cases where this specification states that non-standard characteristics are acceptable.

At the State's request, the manufacturer may be required to substantiate claims made in its specifications by providing certified copies of test reports for tests conducted by a recognized independent testing laboratory.

The burnisher shall be essentially the standard product of the manufacturer, differing only in respects necessary to meet special requirements of this specification and/or the Invitation for Bid. The component parts of the unit need not be products of the same manufacturer. The unit offered shall be a new, current production model. It shall be complete with all necessary operating accessories customarily furnished by the manufacturer.

##### 2. Ease of Maintenance

The design of the unit shall permit ready accessibility for servicing, replacement, and adjustment of component parts and accessories, with minimum disturbance of other elements.

##### 3. Safety

All moving parts, parts subject to high temperature, and electrical components that are of such nature or so located as to become a hazard to operating personnel, shall be insulated, fully enclosed or guarded. Operator's foot operated controls shall be provided with non-skid surfaces. Operator shall have a clear and unobstructed view in all directions.

The burnisher shall be furnished with all applicable equipment and accessories as required by OSHA. The machine shall be designed not to exceed OSHA 29 CFR §1910.95 requirements for noise at ear level of the operator for 8-hour exposure.

Cord connected and battery powered products shall have a safety listing marking or label compliant to the North Carolina General Statute Chapter 66, Article 4, which shall indicate equipment has been evaluated by an independent third party laboratory acceptable by the North Carolina Building Codes Council as referenced on the current NC Department of Insurance website. The referenced webpage list indicates laboratories acceptable for listing evaluation of specific product categories and includes but is not limited to Underwriters Laboratories, Intertek (ETL) and CSA. The safety listing requirement applies to the entire unit, not just a component thereof, like a switch, motor, control panel or power supply cord. If the battery charger is provided as a separate component, the battery charger shall also be safety listed.

Ref:

<http://www.ncdoi.com/osfm/engineering/bcc/documents/electricalmechanicalequipm entlabeling.pdf>

**B. MOTOR**

Electric Motors for Electric Cord Powered Machines

Electric drive motor shall be 110-120 Volts A. C. or 110-120 D. C. rectified for A. C., 60 Hertz, single-phase power source furnished with all necessary components and controls to make it a complete operating power source suitable for continuous service. Electric motor shall include a circuit breaker. Motor shall be safety listed by a Nationally Recognized Testing Laboratory (NRTL).

D. C. motors shall have carbon brush wear indicator lights to designate when the engine requires service.

The electric cord shall be a minimum fourteen (14) guage, three (3) wire grounded, heavy duty plug with a minimum of fifty (50) foot non-marking cord with waterproof jacket. A cord strain relieving device shall be provided.

Electric Motors for Battery Powered Machines

Electric drive motor minimum voltage is as required in section III. E. Batteries. Burnisher shall be furnished with all necessary components and controls to make it a complete operating power source suitable for continuous service. Electric motor shall include a circuit breaker. Motor shall be UL listed or listed by a Nationally Recognized Testing Laboratory (NRTL).

Built-in or separate battery charger shall be capable of recharging 80% discharged batteries less than 8 hours.

**C. DRIVE**

Machines shall have hydraulic, hydrostatic or direct drive. Chain drives will not be accepted.

**D. PADS**

Burnisher shall have pads that are easily adjustable for wear as applicable and easily replaceable. Pad should have a mechanism to accommodate uneven floors. Operator accessible pad pressure adjustment must be available. Bristle materials shall be furnished as specified in Invitation For Bid.

**E. BATTERIES (For Class 4, 5, and 6 Only)**

Batteries shall be of the standard type indicated in the manufacture's standard published literature. The burnisher shall use a minimum of a 36 Volt system with 180 amp-hour or greater batteries. Multiple batteries shall be of the same voltage. Batteries and battery charger shall be included with the equipment. Batteries shall be certified or otherwise documented as being in compliance with applicable requirements of the Battery Council International Specifications.

**F. WHEELS AND TIRES**

Machine shall be equipped with minimum of two wheels, adequately sized for easy machine mobility. Wheels shall have resilient treads that will not mark or scratch floor or floor covering under normal service conditions. Wheels shall be such that the machine is stable and does not tip over easily under normal operating conditions and speeds.

**G. PERFORMANCE**

Burnisher shall effectively smooth and polish the floor leaving a high gloss finish. Burnisher shall be equipped with the manufacturer's standard, passive or active, dust control system and be capable of operating up a slope of six (6) grade or five (5) degrees as written in the manufacturer's current published literature.

**H. OPERATOR CONTROLS**

All controls necessary for the safe and efficient operation shall be furnished in a location convenient to the operator.

**I. ENGLISH REQUIREMENT**

All written documentation including safety placards, manuals, labels, and other such written communication on or about this equipment shall be supplied in English.

**IV. WARRANTY**

The contractor warrants to the owner that all scrubbing machines furnished under this specification will be new and of good material and workmanship. The contractor agrees to promptly replace any part or parts, except normal wear parts, which by reason of defective material or workmanship shall fail under normal use, free of negligence or accident. Such parts replacement and the labor for replacement shall be warranted for a period of three (3) years from date of acceptance, free of any charge to the owner or his representative.

Any portion of manufacturer's standard warranty that exceeds the above warranty requirements shall be in effect on the contract.

**V. SERVICE, PARTS, AND MANUALS**

The contractor shall furnish one owner/operator's manual containing complete operator's instructions and a spare parts list and location from which spare parts may be obtained.

**VI. ACCEPTANCE EVALUATION AND QUALITY ASSURANCE**

An acceptance inspection may be performed to assure that the machine is as ordered with all components and accessories supplied as ordered. An operational test may be performed to insure that the machine operates satisfactorily.

**VII. DELIVERY AND PAYMENT**

Delivery and payment for equipment furnished under this specification shall be in accordance with the terms and conditions stated in the Invitation For Bid. The contractor shall be responsible for any packing, packaging or protection required to insure delivery in an undamaged condition.

## **VIII. ORDERING DATA**

Purchasers should exercise any desired option offered here and should specify the following in the requisition and Invitation For Bid.

1. Title, number and date of this specification
2. Product class
3. Type machine required
4. Gel filled or wet cell battery
5. Specify built-in battery charger or separate battery charger, if required
6. Required operation hours without recharging other than specified herein
7. Brush material
8. If demonstration is required prior to purchase
9. Any other accessories, special requirements or options.