



XLERATOR® GUIDE SPECIFICATION

INTRODUCTION

***** Excel Dryer, Inc. manufactures several types of warm air electric hand dryers including a new technology, ultra-fast model, the **XLERATOR® Hand Dryer**. This patented innovation addresses the typical reasons users are dissatisfied with electric hand dryers:

1. Slow drying time of approximately 30 to 45 seconds.
2. Residual moisture left on hands and consequent feeling of discomfort and coldness as this moisture evaporates.

The **XLERATOR® Hand Dryer** completely dries hands in 10 to 15 seconds. By eliminating residual moisture, the hands are warm and comfortable after drying. This new technology rapidly dries hands in two sequential phases. In the first phase, loose water droplets are blown from the hands with a strong, controlled air blast. In the second phase, residual moisture is evaporated and the hands are warmed by an air stream heated up to 135 degrees F (55 degrees C). Refer to Excel Dryer product literature for detailed descriptions and verifying test reports.

Not only does the **XLERATOR® Hand Dryer** dry hands in one third the time required by conventional dryers, the unit runs on 15 amp service. The combination of these two factors results in an 80 percent energy savings compared to conventional hand dryer use.

This guide specification, SECTION 10811 - RAPID DRYING ELECTRIC HAND DRYER, has been developed to assist the design professional in incorporating Excel Dryer's **XLERATOR® Hand Dryer** into a construction project. Hopefully, this guide will reduce the time and effort required to prepare project specifications.

The section number and title are based on classifications and numbering contained in MasterFormat - Master List of Numbers and Titles for the Construction Industry, 1995 Edition, published jointly by the Construction Specifications Institute (CSI) and Construction Specifications Canada (CSC). This specification section has been organized according to SectionFormat - A Recommended Format for Construction Specifications Sections, 1997 Edition, published jointly by CSI and CCS. SectionFormat provides a uniform approach to organizing specification text by placing information in three standard parts:

- | | |
|---------------------------------|---|
| <u>PART 1 - GENERAL</u> | Describes administrative and procedural requirements. |
| <u>PART 2 - PRODUCTS</u> | Describes materials, products, and accessories to be incorporated into the construction project. |

PART 3 – EXECUTION

Describes how the products will be installed at the construction site.

This specification has been written using the writing principles and techniques contained in the Manual of Practice published by CSI. The imperative mood has been used for instructions for providing, fabricating, and installing XLERATOR® Hand Dryer. It is understood that the specifications are addressed to the contractor who is legally responsible to the owner for constructing the project. Hence, the imperative mood is used to indicate actions to be performed by the contractor.

Unnecessary words such as "the", "an", and "a" have been eliminated. Streamlining has also been used to reduce verbiage. This technique places the subject first and hence provides key words for quick reference. The words "shall be" are included by inference where a colon (:) is used.

Throughout this product guide specification, references are made to other specification sections that might be contained in the project manual. These references are presented as examples and coordination reminders. For each project, these references will need to be revised to reflect actual sections being used.

Within the specification text, Imperial dimensions are presented first in brackets followed by System International Metric (SI) equivalents also in brackets. Depending on project requirements, either the Imperial or the SI metric equivalents will need to be deleted.

This product specification will need to be edited by the specifier for a specific project and to reflect the options and applications being used. The guide section has been written so that most editing can be accomplished by deleting unnecessary requirements and options. Depending on project requirements, some additional information will need to be added by the specifier. Options are indicated by []. Notes to assist the specifier in selecting options and editing the specification guide are printed in bold and indicated with *****. For final editing, all brackets and notes will need to be deleted from the guide.

SECTION 10811

RAPID DRYING ELECTRIC HAND DRYER

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Warm air, rapid drying, high efficiency, self contained electric hand dryers.

******* List other specification sections dealing with work directly related to this section such as the following. *******

- B. Related sections:

1. Section 06100 - Rough Carpentry: Blocking in stud partitions for mounting hand dryers.
2. Section 16100 - Wiring Methods: Electrical supply, conduit, wiring, boxes, and wiring devices for hand dryers.

1.2 REFERENCES

****** List by number and full title reference standards referred to in remainder of specification section. ******

- A. ICC/ANSI A117.1 - International Code Council/American National Standards Institute Standard on Accessible and Useable Buildings and Facilities.

1.3 PERFORMANCE REQUIREMENTS

- A. Operating protocol: Hand drying shall be accomplished in two sequential phases:

1. Phase 1: Loose water droplets blown from hands with strong, controlled air blast:
 - a. Air velocity in linear feet per minute (LFM):
 - (1) At outlet: 16,000 LFM.

****** A typical electric hand dryer user will place the hands approximately 4 inches (102 mm) below the air outlet. Therefore, measuring air velocity and temperature at this position to evaluate performance is more critical than measuring at the outlet. ******

- (2) At average hand position of [4 inches] [102 mm] below outlet: 14,000 LFM.

- b. Approximate time: 3 to 4 seconds.
 - c. Water removed: 75 percent.

2. Phase 2: Residual moisture evaporated and hands warmed by heated air stream.

- a. Minimum air temperature at average hand position of [4 inches] [102 mm] below air outlet: [130 degrees F] [54 degrees C] when room temperature is [72 degrees F] [22 degrees C].
 - b. Water removed: 25 percent.

- B. Total drying time required to remove 5 to 6 grams of water: Varies depending on conditions from 10 to 15 seconds.

- C. Maximum moisture remaining on hands at end of drying cycle: 0.2 grams.

1.4 SUBMITTALS

A. Submit in accordance with Section 01330 - Submittal Procedures:

1. Product data: Include detailed description of dryer explaining operating protocol, drying method, and performance. Provide block diagram of basic components.
2. Shop drawings showing dimensions, method of attachment, and required supports.
3. Electrical wiring diagrams for connection of hand dryers.
4. Manufacturer's installation and maintenance instructions.
5. Test reports from independent company showing compliance with Paragraph 1.3.
6. Copy of warranty required by Paragraph 1.6 for review by Architect.

1.5 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing electric hand dryers with 10 years minimum experience.
- B. Hand dryers shall be certified by Underwriters Laboratory (UL), Inc. and shall bear UL labels.

******* Barrier free requirements will depend on type of project and local jurisdiction. Edit and include the following paragraph if toilet rooms and installation of hand dryers need to accommodate persons with physical disabilities. *******

- C. Hand dryers shall be provided and installed in compliance with ICC/ANSI A117.1.

1.6 WARRANTY

- A. Provide under provisions of Section 01770 - Closeout Procedures: 5 year warranty for hand dryer to be free of defects.

PARTS 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Excel Dryer, Inc., 357 Chestnut Street, P.O. Box 365 East Longmeadow, Massachusetts 01028; 413-525-4531; www.exceldryer.com.
- B. [No substitutions allowed.] [Manufacturers of equivalent products submitted and approved in accordance with Section 01630 - Product Substitution Procedures.]

2.2 HAND DRYER

- A. Type: Warm air, electric, rapid drying hand dryer; **XLERATOR®** as manufactured by Excel Dryer, Inc.

- B. Nominal size: [11-3/4 inches wide by 12-11/16 inches high by 6-11/16 inches deep.]
[298 mm wide by 322 mm high by 170 mm deep.]
- C. Weight: [16 pounds.] [7.3 kg.]

******* XLERATOR® Hand Dryer can be provided for five different power sources. Select desired type from the following. *******

- D. Power requirements: [110/120 volt, 12.5 amp, 60 Hz.] [208 volt, 7.0 amp, 60 Hz.]
[220/240 volt, 6.5 amp, 60 Hz.] [277 volt, 5.5 amp, 60 Hz.] [220/240 volt, 6.5 amp,
50 Hz.]

2.3 COMPONENTS

- A. Combination blower and motor: Series commutated, through-flow discharge, vacuum type powered by 5/8 HP, 20,000 RPM motor providing air velocities of:
 - 1. At outlet: 16,000 LFM.
 - 2. At average hand position of [4 inches] [102 mm] below outlet: 14,000 LFM.
- B. Air heater:
 - 1. 900 watts.
 - 2. Located following blower and capable of heating air stream up to [135 degrees F] [55 degrees C] measured at average hand position of [4 inches] [102 mm] below air outlet.
 - 3. Protect with automatic resetting thermostat to open when air flow is restricted and close when air flow is resumed.
- C. Air outlet: Designed to focus air stream, enhance force, and deliver warm air at average hand position of [4 inches] [102 mm] below outlet.
- D. Electronic controls: Infrared sensor automatically turns dryer on when hands are held under air outlet. Removal of hands causes dryer to stop within 2 seconds. Electronic sensor shuts off dryer after 35 seconds if hands are not removed or inanimate object is placed across air outlet.

2.4 ENCLOSURE

- A. Material: One piece, heavy duty, rust-resistant, rib-reinforced, die-cast zinc alloy.

******* XLERATOR® Hand Dryer is provided with two standard finish options. In addition, custom colors are available as a special order. Select desired finish and delete other options. *******

- B. Finish: [Electrostatically applied, chip resistant, white paint.] [Bright chrome plated.] [Custom color as selected by Architect.]
- C. Mounting: Cover mounted to wall plate with tamperproof bolts.
- D. Wall plate: Injected molded, rib reinforced plate with metal L brackets for attaching cover. Provide plate with ten [5/16 inch] [8 mm] diameter holes for surface mounting to wall and two [7/8 inch] [22 mm] diameter holes for electrical wiring.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate requirements for blocking to ensure adequate means for support and installation of hand dryers.
- B. Coordinate requirements for power supply, conduit, disconnect switches, and wiring.

3.2 INSTALLATION

- A. Comply with manufacturer's written installation instructions and approved shop drawings.

******* Placement of hand dryers will vary with layout of toilet rooms and requirements to accommodate persons with physical disabilities. Accessible layout for persons with physical disabilities must ensure that there is a minimum clear floor space of 30 by 48 inches (762 by 1219 mm) in front of or parallel to hand dryers. A portion of the hand dryer may project into this clear space if there is a 29 inches (737 mm) minimum knee and toe space beneath the hand dryer.**

Recommended mounting heights above floor surface vary with use:

Men	43 inches (1092 mm)
Women	41 inches (1041 mm)
Teenagers	39 inches (991 mm)
Young children	33 inches (836 mm)
Persons with physical disabilities	35 inches (889 mm)

Mounting heights may be indicated on drawings or designated as part of this Section. To avoid potential conflicts, do not indicate mounting heights in both specifications and drawings. *****

- B. Mount dryers at [heights indicated on Drawings.] [the following heights above floor surface:]
 1. Men's toilets: [43 inches] [1092 mm].
 2. Women's toilets: [41 inches] [1041 mm].

3. Teenager's toilets: [39 inches] [991 mm].
 4. Young children's toilets: [33 inches] [838 mm].
 5. Toilets for persons with physical handicaps: [35 inches] [889 mm].]
- C. Install dryers securely to supporting substrate so that fixtures are level and aligned with each other. Use type and length of fastener as recommended by manufacturer for type of substrate.

3.3 TESTING AND CLEANING

- A. Inspect installation to verify secure and proper mounting. Test each dryer to verify operation, control functions, and performance. Correct deficiencies.
- B. Clean surfaces and wash with mild soap. Do not use abrasives.
- C. Protect dryers from damage from subsequent construction operations. If damage occurs, remove and replace damaged units.

END OF SECTION

COMMENTS

This product guide specification has been developed to assist the design professional in specifying the XLERATOR® Hand Dryer. Your questions, comments, and suggestions will be appreciated and useful in preparing future revisions. Please respond to Excel Dryer, Inc. by mail, telephone, Fax, or E-Mail.

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