Tok Center Renovation
Project No. 2007057 TKRN
Building: Tok Center
Building No.: __________
Contractor: Armstrong Construction, Inc.
P.O. Box 56607
North Pole, AK 99705
(907) 451-9123
Consultant: Design Alaska Inc.
601 College Road
Fairbanks, AK 99701
(907) 452-1241
Operational and Maintenance Manual, Volume 1 of 1
Discipline: Architectural Submittal
Date: 9/18/07
# Operation & Maintenance Manual Directory

Tok Center Renovation  
Project No.: 2007057 TKRN  
Building: Tok Center  
Contractor: Armstrong Construction, Inc.  
P.O. Box 56607  
North Pole, AK 99705  
Ph #: (907) 451-9123  
Fx #: (907) 490-2652  
Consultant: Design Alaska, Inc.  
601 College Rd.  
Fairbanks, AK 99701  
Ph #: (907) 452-2128

## Subcontractors

<table>
<thead>
<tr>
<th>Subcontractor</th>
<th>Contact Information</th>
</tr>
</thead>
</table>
| Samson Electric               | 3125 Van Horn Rd.  
Fairbanks AK 99701  
Ph 451-0252  
Fx 451-6103 |
| South Central Mech.           | P.O. Box 876082  
5007 W Reliance  
Wasilla, AK 99687  
Ph 376-0294  
Fx 376-0209 |
| Armstrong Commercial Flooring | P.O. 3001  
Lancaster, PA 17604  
Ph 717-397-0611 |
| MacCheyne’s Carpets Plus      | 2620 Peger Road  
Fairbanks AK 99708  
Ph 479-9193  
Fx 455-9193 |
| Aurora Construction Supply    | P.O. Box 83569  
Fairbanks AK 99708-3569  
Ph 452-4463  
Fx 456-3414 |
| Pac West                      | 2000 E Dowling Rd. #15  
Anchorage, AK 99507-1956  
Ph 907-562-3168  
Fx 907-562-3031 |
| Bucher Glass Inc.             | 1902 Hanson Road  
Fairbanks AK 99701-2702  
Ph 452-2394  
Fx 456-4175 |
| Roppe Corp.                   | P.O. Box 1158  
Fostoria, Ohio 44830  
Ph 419-435-8546 |
| Commercial Contractors        | 4600 Fairbanks Street  
Fairbanks, AK 99703  
Ph 563-1911  
Fx 562-4714 |
| Spenards                      | 2460 Phillips Field Rd.  
Fairbanks, AK 99701  
Ph 450-2225  
Fx 450-2278 |
| Diomede Enterprises           | 12790 Old Seward Hwy Ste B  
Anchorage, AK 99515  
Ph 907-345-0043  
Fx 907-345-0247 |
| Springs Window Fashions       | P.O. 500 Rt. 405  
Montgomery, PA 17752  
Ph 570-544-4749  
Fx 800-628-9984 |
| Hartung Glass Industries      | 17830 West Valley Hwy  
Seattle, WA 98188  
Ph 425-656-2626  
Fx 425-656-2601 |
| Universal Welding             | 2720 Hurst Rd  
North Pole, AK 99705  
Ph 488-2934  
Fx 488-7856 |
| IPS                           | P.O. Box 968  
Stafford, TX 77497-0968  
Ph 281-499-2605  
Fx 281-499-3363 |
# Operation & Maintenance Manual Index

Tok Center Renovation  
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<table>
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<th>Specification Reference #</th>
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</tr>
<tr>
<td>Maintenance Data</td>
</tr>
<tr>
<td>Warranties</td>
</tr>
</tbody>
</table>

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| Maintenance Data            | 07412-1 |
| Warranties                  | 07412-2 |

| **Vinyl Windows**           |
| Maintenance Data            | 08561-1 |
| Warranties                  | 08561-2 |

| **Finish Hardware**         |
| Door Harware Schedule       | 08710-1 |
| Keying Schedule             | 08710-2 |
| Maintenance Data            | 08710-3 |
| Warranties                  | 08710-4 |

| **Resilient Flooring & Base**|
| Maintenance Data             | 09652-1 |
| Warranties                   | 09652-2 |

| **Horizontal Blinds**       |
| Maintenance Data            | 12491-1 |
| Warranties                  | 12491-2 |

| **Floor Mats**              |
| Maintenance Data            | 12484-1 |
| Warranties                  | 12484-2 |
**O & M DATA SHEET**
University of Alaska Fairbanks  
Tok Center Renovation  
Project No.: 2007057 TKRN

1. Item No.: 07411
2. Specification Section/Drawing No./Detail No.: 07411
3. Name of Item/Drawing Equipment No.: Maintenance Data
4. Manufacturer/Model No.: Diomede Enterprises, Inc.
5. Use and Location: 
6. Size/Capacity: 
7. Supplier: Diomede Enterprises
8. Source of Spare Parts: Diomede Enterprises
9. Provider(s) of Warranty Service: Diomede Enterprises and Armstrong Construction
   
   1796 Old Glenn Hwy  P.O. Box 50
   Anchorage, AK 99515  North Pole, AK 99705
10. Subcontractor: None
11. Other Contractor Comments: None

**CONTRACTOR REVIEW:**  
Contractor: Armstrong Construction, Inc
Reviewed By: [Signature]

Title: President  
Date: 9/18/2007

\*This information must be provided for all items. Be as specific as possible.
DIOMEDE SNOW GUARD WARRANTY

We (Diomede Enterprises) warrant our coated steel products as follows:

Performance:
1. The paint on the products will not for a period of five (5) years after installation from application of the coating:
   a. Peel, check or crack.
   b. Fade or change color, in excess of five (5) DE units as measured using the procedures of ASTM.
   c. Chalk in excess of a numeric rating of eight (8) as measured using the procedures of ASTM D-4214-89.
2. The metal substrate will not, for a period of twenty (20) years after shipment:
   a. Fail structurally, rupture, or perforate due to corrosion caused by exposure to normal atmospheric corrosion.
3. The snow guard will perform as expected and engineered.
4. The snow guards must be installed and documented according to specifications to meet performance criteria.

Maintenance:
1. The product must be regularly washed, either by fresh rainwater or by cleaning with one cup of Tide or other common detergent containing less than .5% phosphate dissolved in five (5) gallons of fresh water.
2. The product must be systematically rinsed with fresh water in areas of high salt concentration to prevent accumulation of concentrated salt deposits.
3. Cleaning must include underside of any surface area of product.
4. Debris must be removed immediately from contact of product.

Damage:
1. This warranty does not apply to mechanical or chemical damage. It does not apply to damage sustained by excessive snow loads. It does not apply to corrosion due to edge exposure. It does not apply to damage from falling objects, fire, or other accident or casualty, vandalism, external forces, explosions, civil disturbances, atomic radiation, or other natural or man-made disasters.

Non-Transferable:
1. This warranty only applies to original buyer and owner stated below and is not transferable.

Notification:
1. You must notify us within thirty (30) days after discovery of any alleged defect in material or workmanship, and allow us a reasonable time and opportunity to inspect the product.
1. Item No.: 07411-2
2. Specification Section/Drawing No./Detail No.: 07411
3. Name of Item/Drawing Equipment No.: Warranties
4. Manufacturer/Model No.: ______________________________
5. Use and Location: ______________________________
6. Size/Capacity: ______________________________
7. Supplier: Diomede Enterprises

8. Source of Spare Parts: Diomede Enterprises

9. Provider(s) of Warranty Service: Diomede Enterprises and Armstrong Construction
   Anch., AK 99515  North Pole, AK 99705

10. Subcontractor: ______________________________

11. Other Contractor Comments: ______________________________

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc

Reviewed By: ______________________________
(Signature)

Title: President
Date: 9/18/2007

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Non-Transferable:
1. This warranty only applies to original buyer and owner stated below and is not transferable.

Notification:
1. You must notify us within thirty (30) days after discovery of any alleged defect in material or workmanship, and allow us a reasonable time and opportunity to inspect the product.
I. Item No.: 07412-

2. Specification Section/Drawing No./Detail No.: 07412

3. Name of Item/Drawing Equipment No.: Maintenance Data

4. Manufacturer/Model No.: 

5. Use and Location: 

6. Size/Capacity: 

7. Supplier: IPS

8. Source of Spare Parts: IPS

9. Provider(s) of Warranty Service: IPS and Armstrong Construction

10. Subcontractor: 

11. Other Contractor Comments: 

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc

Reviewed By: [Signature]

Title: President

Date: 9/18/2007

1 This information must be provided for all items. Be as specific as possible.
Cleaning and Maintenance of Valspar Fluoropolymer Coated Surfaces: Fluoron®, Fluorodize®, Fluorthane®, Acroflur

Valspar's 70% fluoropolymer systems are similar in molecular structure to Teflon®, a product most of us are familiar with through use in our households. Among the beneficial characteristics of our fluoropolymer coatings is that they are extremely inert. The molecules on the surface of the coating are so tightly bound together that they don't want to react with anything. Their slick surface helps make them resistant to many elements found in the environment such as air pollution, acid rain, and general airborne dirt.

However, if the need to clean or remove deposits from your coating does arise, a variety of methods for removal of surface deposits are available. Two precautions: (1) do not use wire brushes, abrasives, or similar cleaning tools which will mechanically abrade the coating's surface, and (2) certain cleaning agents listed below should be tested in an inconspicuous area before use on a large scale.

**HOT OR COLD DETERGENT SOLUTIONS**
A 5% solution in water of commonly used commercial and industrial detergents will not have any deleterious effect on a fluoropolymer surface. These solutions should be followed by an adequate rinse of water. Use cloth or soft bristle brush for application.

**SOLVENTS**
Most organic solvents are flammable and/or toxic, and must be handled accordingly. Keep away from open flames, sparks and electrical motors. Use adequate ventilation, protective clothing, and goggles.

Solvent that may be used to remove non-water soluble deposits (tar, grease, oil, paint, graffiti, etc.) from fluoropolymer surfaces include:

**A. Alcohols**
- Denatured alcohol (ethanol)
- Isopropyl (rubbing alcohol)
- Methanol (wood alcohol)

*Note: methanol is toxic*

The above alcohols have no permanent effect on fluoropolymer surfaces.

**B. Petroleum Solvents and Turpentine**
- VM&P naphtha
- Mineral spirits
- Kerosene
- Turpentine (wood or gum spirits)

The above solvents have no permanent effect on fluoropolymer surfaces.

**C. Aromatic and Chlorinated**
- Xylol (Xylene)
- Toluol (Toluene)
- Perchloroethylene (Perclene)
- Trichloroethylene (Triclene)

*Note: Perchloroethylene and Trichloroethylene are toxic.*
The above solvents should be used with caution on fluoropolymer surface. Limit contact of the fluoropolymer surface with solvent to five minutes maximum and test before using.

D. Ketones, Esters, Lacquer Thinner, Paint Remover
- Methyl ethyl ketone (MEK)
- Methyl isobutyl ketone (MIBK)
- Ethyl acetate (nail polish remover)
- Butyl acetate
- Lacquer thinner
- Paint remover (non-flammable)
- Acetone (do not use acetone on fluoropolymer surfaces)

The above solvents should be used cautiously on a fluoropolymer surface. Limit contact of fluoropolymer surface and test before using. Note: There are many formulations of paint remover on the market. It is possible that some may remove the fluoropolymer surface. Proceed very cautiously in use of paint remover. Metal supplier and coating manufacturer are not responsible for damage from unrestricted use.

Chemical Solutions

Sodium hypochlorite solution (laundry bleach, Clorox)

Hydrochloric acid (muriatic acid)

Oxalic acid

Acetic acid (vinegar)

Hydrochloric or muriatic acid, diluted with ten volumes of water, may assist in removing rust stains from fluoropolymer surfaces. Limit contact to five minutes. Caution: acid solutions are corrosive and toxic. Flush all surfaces with copious amounts of water after use.

Oxalic acid solutions or vinegar may be used for the same purpose. Flush with water.

GRAFFITI
Graffiti presents a special problem because of the many possible agents used, generally aerosol paint. It is best to try the less active solvents first (Solvent Group A, B, C), then the stronger solvents (Solvent Group D). If none of these are satisfactory, it may be necessary to resort to touchup, repaint, or replacement, depending on the extent of the damage.

WARRANTY
Misuse or abuse of any of the cleaning agents listed above will result in a voiding of warranty for the surface affected.
University of Alaska Fairbanks
Tok Center Renovation
Project No.: 2007057 TKRN

O & M DATA SHEET

1. Item No.: 07412-2
2. Specification Section/Drawing No./Detail No.: 07412
3. Name of Item/Drawing Equipment No.: Warranties
4. Manufacturer/Model No.: 
5. Use and Location:
6. Size/Capacity: 
7. Supplier: IPS
8. Source of Spare Parts: IPS
9. Provider(s) of Warranty Service: IPS and Armstrong Construction
10. Subcontractor:
11. Other Contractor Comments:

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc
Reviewed By: [Signature]
Title: President
Date: 9/18/2007

'This information must be provided for all items. Be as specific as possible.
**O & M DATA SHEET**  
University of Alaska Fairbanks  
Tok Center Renovation  
Project No.: 2007057 TKRN

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<td>Name of Item/ Drawing Equipment No.:</td>
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<td>Use and Location:</td>
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<td>Size/Capacity:</td>
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<tr>
<td>Source of Spare Parts:</td>
<td>Bucher Glass</td>
</tr>
<tr>
<td>Provider(s) of Warranty Service:</td>
<td>Bucher Glass and Armstrong Construction</td>
</tr>
</tbody>
</table>

**CONTRACTOR REVIEW:**  
Contractor: Armstrong Construction, Inc  
Reviewed By:  
(Signature)  
Title: President  
Date: 9/18/2007

1 This information must be provided for all items. Be as specific as possible.
MAINTENANCE OF GLASS PRODUCTS

Cleaning of the glass during and after the construction period is necessary and essential to maintain the aesthetic performance. For normal cleaning the use of a soft, clean, grit free cloth and a mild soap, detergent, or slightly acidic (vinegar) cleaning solution is recommended. Rinse immediately with clean water and remove excess water with a squeegee, taking care to prevent metal parts of the cleaning equipment from contacting the glass surface.

Reflective glass requires extra care while cleaning to prevent damage to the coating. Since fingerprints, grease smears, dirt, scum, and sealant residue are more noticeable on reflective glass, more frequent cleaning will be required. The same cleaning techniques used for clear glass would be used for reflective glass. Abrasive cleaners should never be used on reflective glass. Razor blades, putty knives, and metal parts of cleaning equipment will scratch the reflective coating. Extreme care must be taken.

Storage of glass at the jobsite requires special consideration to prevent damage to the glass surface.
1. Item No.: 08561
2. Specification Section/Drawing No./Detail No.: 08561
3. Name of Item/Drawing Equipment No.: Warranties
4. Manufacturer/Model No.: Hartung Glass Industries Seattle, WA 98178
5. Use and Location:
6. Size/Capacity:
7. Supplier: Bucher Glass
   1902 Hanson Rd.
   Anchorage, AK 99508
8. Source of Spare Parts: Bucher Glass
9. Provider(s) of Warranty Service: Armstrong Construction
   2004 44th Ave. #102 Anchorage, AK 99501
10. Subcontractor: None
11. Other Contractor Comments: None

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc
Reviewed By: [Signature]
Title: President
Date: 9/18/2007

1 This information must be provided for all items. Be as specific as possible.
Effective with substantial completion.

Insulated Glass Limited Warranty
Super-Spacer

We, Hartung Glass Industries, Inc., warrant our insulated glass against substantial obstruction of vision from dust or film formation between the sealed panes of glass, resulting from failure of the perimeter seal due to defective materials or defective workmanship in the manufacture of this product. This warranty shall not apply if the failure of the seal is caused by Acts of God, improper installation by persons other than our employees or authorized dealers, mishandling by persons other than our employees, or by any other cause whatsoever not within our exclusive control, and shall not apply unless the failure occurs and claim is delivered to us within 10 years after the unit leaves our possession. Unit(s) must be properly installed following guidelines of the FGMA manual. OUR OBLIGATION IS TO REPLACE THE DEFECTIVE GLASS F.O.B. DEALER'S WAREHOUSE FROM WHICH THE ORIGINAL SALE WAS MADE, NOT TO INSTALL SAID UNIT OR UNITS. We can require an inspection by one of our employees prior to replacement.

** Exception: Warranty does not apply to units installed which exceed 15 degrees from the vertical. Warranty does not apply to units installed in a mobile or marine based application, in a sauna or around a pool. Surface applied films void warranty.
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<td>Provider(s) of Warranty Service:</td>
<td>Armstrong Construction P.O. 56607 North Pole, AK 99705 (907) 451-9123 Aurora Construction Supply P.O. 83569 Fairbanks, AK 99708 (907) 452-4463</td>
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<td>Other Contractor Comments:</td>
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CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc

Reviewed By: [Signature]

Title: President
Date: 11/13/2007

1 This information must be provided for all items. Be as specific as possible.
JOB NAME:
TOK-CENTER
UNIV. OF FAIRBANKS
FAIRBANKS, ALASKA

ARCHITECT'S NAME:
DESIGN ALASKA

CONTRACTOR'S NAME:
ARMSTRONG CONSTRUCTION

OWNER'S NAME:
UNIV. OF ALASKA FAIRBANKS

SCHEDULE NUMBER:
10500-RHW (P.O. #:5286)

Schedule Date:
7/19/07
Revised Date:
* 8/21/07

HARDWARE CONSULTANT:
JUDY RITTERODT
jritterodt@chthardware.com
EXPLANATION OF HANDING

STANDARD DOOR HANDING

LEFT HAND

- Inside
- "LH" BEVEL
- HINGE SIDE
- outside

RIGHT HAND

- Inside
- "RH" BEVEL
- HINGE SIDE
- outside

REVERSE DOOR HANDING

LEFT HAND REVERSE BEVEL

- Inside
- "LHR" BEVEL
- HINGE SIDE
- outside

RIGHT HAND REVERSE BEVEL

- Inside
- "RHR" BEVEL
- HINGE SIDE
- outside

THE HAND OF DOOR IS ALWAYS DETERMINED FROM THE OUTSIDE

HERE ARE A FEW RULES TO FOLLOW:
- *THE OUTSIDE OF AN EXTERIOR DOOR IS THE STREET OR ENTRANCE SIDE.
- *THE OUTSIDE OF A ROOM DOOR IS THE HALL SIDE.
- *THE OUTSIDE OF A SINGLE COMMUNICATING DOOR IS THE SIDE FROM WHICH THE HINGES ARE NOT VISIBLE WHEN THE DOOR IS CLOSED.
- *THE OUTSIDE OF A CLOSET DOOR IS THE ROOM OR HALL SIDE.
- *THE OUTSIDE OF ANY LOCKED DOOR IS THE KEY SIDE.

MANUFACTURER'S ABBREVIATIONS:

BE - BEST
LCN - LCN CLOSERS
MC - MCKINNEY
PE - PEMKO
RI - RIXSON
RO - ROCKWOOD
TI - TICE INDUSTRIES
VD - VON DUPRIN
## Hardware Schedule

Project ID: 10500-GHMR  TOK CENTER - U OF A

### HW

#### Heading #1

<table>
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<tr>
<th>Quantity</th>
<th>Item Description</th>
<th>Model/Part Number</th>
<th>Supplier</th>
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<tbody>
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<td>(HI-1) MC KINNEY</td>
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<td>1</td>
<td>Exit Device</td>
<td>98NL x 880NL (3'0 DR)</td>
<td>(ED-1) VON DUPRIN</td>
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<td>Rim Cylinder</td>
<td>1E72</td>
<td>(CY-1) BEST</td>
</tr>
<tr>
<td>1</td>
<td>Const. Core</td>
<td>ICC7A2-GREEN</td>
<td>(CY-2) BEST</td>
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<td>Overhead Stop</td>
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<td>(OH-1) RIXSON</td>
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<td>(CL-1) LCN</td>
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<td>(KP-1) TICE</td>
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<td>Exit Device</td>
<td>990-DT</td>
<td>(PP-1) VON DUPRIN</td>
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<td>1</td>
<td>Push Bar</td>
<td>45 x TB</td>
<td>(PP-2) ROCKWOOD</td>
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<td>1-326</td>
<td>(OH-1) RIXSON</td>
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<td>1</td>
<td>Door Bottom</td>
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<tr>
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<td>Pull</td>
<td>960-DT</td>
<td>(PP-1) VON DUPRIN</td>
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<tr>
<td>1</td>
<td>Push Bar</td>
<td>45 x TB</td>
<td>(PP-2) ROCKWOOD</td>
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<td>1</td>
<td>Overhead Stop</td>
<td>1-326</td>
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</tr>
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<td>Kick Plate</td>
<td>B4E 10&quot; x 34-1/2&quot;</td>
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<td>1</td>
<td>Exit Device</td>
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<td>(TH-2) PEMKO</td>
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<tr>
<td>1</td>
<td>Weatherstrip</td>
<td>S88D 17&quot;</td>
<td>(GA-1) PEMKO</td>
</tr>
<tr>
<td>1</td>
<td>Door Bottom</td>
<td>18061CNB 36&quot;</td>
<td>(SW-1) PEMKO</td>
</tr>
</tbody>
</table>
## Hardware Schedule
**Project ID:** 10500-GHMR TOK CENTER - U OF A HW

### Heading #: 5

<table>
<thead>
<tr>
<th>QTY</th>
<th>Item</th>
<th>Description</th>
<th>LHR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Door: 100U1 SGL</td>
<td>EXTERIOR FROM UTILITY/MAINT 100U-1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>HINGES</td>
<td>T4A3380 5 x 4.5 NRP</td>
<td>32D</td>
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<tr>
<td>1</td>
<td>LOCKSET</td>
<td>4SH7D15J x KOL (KNURED ON EXTERIOR SIDE)</td>
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</tr>
<tr>
<td>1</td>
<td>CONST. CORE</td>
<td>ICC7A2-GREEN</td>
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</tr>
<tr>
<td>1</td>
<td>OVERHEAD STOP</td>
<td>1-326</td>
<td>32D</td>
</tr>
<tr>
<td>1</td>
<td>CLOSER</td>
<td>4041-EDA PUSH SIDE MTD.</td>
<td>ALUM</td>
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<tr>
<td>1</td>
<td>KICK PLATE</td>
<td>B4E 10&quot; x 34-1/2&quot;</td>
<td>32D</td>
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<tr>
<td>1</td>
<td>THRESHOLD</td>
<td>254X4AFG 36&quot; x FHSL-25</td>
<td>ALUM</td>
</tr>
<tr>
<td>1</td>
<td>WEATHERSTRIP</td>
<td>29A1APK 36&quot; (MT. @ HEAD)</td>
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</tr>
<tr>
<td>2</td>
<td>WEATHERSTRIP</td>
<td>29A0APK 80&quot; (MT. @ JAMBS)</td>
<td>ALUM</td>
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<tr>
<td>1</td>
<td>DOOR BOTTOM</td>
<td>18081CNB 36&quot;</td>
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</tr>
<tr>
<td>1</td>
<td>LATCH PROTECTOR</td>
<td>LP01</td>
<td>32D</td>
</tr>
</tbody>
</table>

9/14/2007 4:08:49 PM
University of Alaska Fairbanks
Tok Center Renovation
Project No.: 2007054 TKRN

1. Item No.: 08710-2
2. Specification Section/Drawing No./Detail No.: 08710
3. Name of Item/Drawing Equipment No.: Keying Schedule
4. Manufacturer/Model No.: 
5. Use and Location: 
6. Size/Capacity: 
7. Supplier: Aurora Construction Supply
8. Source of Spare Parts: Aurora Construction Supply
9. Provider(s) of Warranty Service: Armstrong Construction, Inc.
P.O. 56607
North Pole, AK 99705
(907) 451-9123
Aurora Construction Supply
P.O. 83569
Fairbanks, AK 99708
(907) 452-4463
10. Subcontractor: None
11. Other Contractor Comments: None

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc
Reviewed By: 
(Signature)
Title: President
Date: 11/13/2007

1 This information must be provided for all items. Be as specific as possible.
Armstrong Construction Inc.
Attn: Dave Armstrong
PO Box 56607
North Pole, AK 99705

Gentlemen:

We are sending you:  [ ] Attached  [ ] Under Separate Cover via

[ ] Submittals  [ ] Sample(s)  [ ] Shop Drawings  [ ]

<table>
<thead>
<tr>
<th>Copies</th>
<th>Date</th>
<th>No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>Hardware warranty, Schedule and Data Sheets</td>
</tr>
</tbody>
</table>

These are transmitted as checked below:

[ ] For Approval  [x] As Requested  [ ] Approved as Noted

[ ] Color Selection  [ ]

[ ] Please return approved submittals

Remarks:

Keying is done by the factory direct with the owner, Aurora & Armstrong are not involved in that.

Signed: Dick Engebretson
### O & M DATA SHEET
University of Alaska Fairbanks
Tok Center Renovation
Project No.: 2007057 TKRN

<table>
<thead>
<tr>
<th>Item No.:</th>
<th>08710-3</th>
<th>Specification Section/Drawing No./Detail No.: 08710</th>
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<td>Name of Item/Drawing Equipment No.:</td>
<td>Maintenance Data</td>
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<tr>
<td>Manufacturer/Model No.:</td>
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<td></td>
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<tr>
<td>Use and Location:</td>
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<td>Size/Capacity:</td>
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<tr>
<td>Supplier:</td>
<td>Aurora Construction Supply</td>
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<tr>
<td>Source of Spare Parts:</td>
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<tr>
<td>Provider(s) of Warranty Service:</td>
<td>Aurora Construction Supply and Armstrong Construction</td>
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<td>Subcontractor:</td>
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<tr>
<td>Other Contractor Comments:</td>
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</tr>
</tbody>
</table>

**CONTRACTOR REVIEW:** Contractor: Armstrong Construction, Inc  
Reviewed By: [Signature]  
Title: President  
Date: 9/18/2007

---

1 This information must be provided for all items. Be as specific as possible.
MANUFACTURER'S DATA

TOK CENTER

UNIVERSITY OF FAIRBANKS

DATE SENT 7/19/07
Stainless steel base or available in brass or bronze base material polished and plated or furnished in prime or powder coat.

Steel material polished and plated or furnished in prime or powder coat.

Available Options:

- NRP (non-removable pin)
- T4B (ball bearing)
- TCA (concealed bearing)
- RC (round corner - ¼" radius furnished unless specified otherwise)
- HT (hospital tip)
- BT (ball tip)
- ST (steeple tip)
- SSF (safety stud feature)
- RB (raised barrel)*
- CC-4 (concealed circuit - 4 wire)
- CC-6 (concealed circuit - 6 wire)
- CC-8 (concealed circuit - 8 wire)
- CS (concealed switch - handing required)**
- MM (magnetic monitoring)
- "S" (sharpening, our additional rust resistant base under prime coat on steel base)

*Refer to page 104 for raised barrel.

**Not available in Stainless

Note: 8" x 6" and 8" x 8" have six bearings.

APPLICATION

Available Sizes

<table>
<thead>
<tr>
<th>Inches</th>
<th>Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>4½ x 4½</td>
<td>0.180</td>
</tr>
<tr>
<td>5 x 5</td>
<td>0.190</td>
</tr>
<tr>
<td>6 x 6</td>
<td>0.200</td>
</tr>
<tr>
<td>6½ x 6½</td>
<td>0.200</td>
</tr>
<tr>
<td>8 x 6</td>
<td>0.210</td>
</tr>
<tr>
<td>8 x 8</td>
<td>0.220</td>
</tr>
</tbody>
</table>

* Supplied in Bronze or Steel only

Packing:

All 5K heavy weight full mortise hinges are packed with all machine and ½ wood screws. For special screws consult price book on availability.

ANSI Cross Reference:

A2111 Brass, Bronze
A5111 Stainless
A8111 Steel

Recommended for use on high frequency and/or heavy wood or metal doors in schools, hospitals or other public buildings where heavy traffic is experienced.
### 1E Mortise Cylinder

Standard mortise applications require use of BEST's 1E Series cylinders with standard 1E-C4 cam. BEST cylinders may be altered to function with other manufacturers’ locks by use of different cams (see page 6) and different cylinder rings (see page 9). Special cylinder variations are available for most applications (see pages 4 & 5). BEST cylinders are machined from brass or bronze bar stock and are available in a variety of finishes. Additional security is provided by a set screw that mounts diagonally in the cylinder wall and when tightened, holds the cylinder securely in the housing. BEST mortise cylinders feature the BEST interchangeable core and may be masterkeyed into any existing BEST system. Contact your local Best Access Systems sales office for information on special cylinder applications not listed in this catalog.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Cylinder Nomenclature</th>
<th>Dimension</th>
<th>Door Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder Diameter</td>
<td>1E-64</td>
<td>1 7/8&quot;</td>
<td>1 7/8&quot; to 2 1/4&quot;</td>
</tr>
<tr>
<td></td>
<td>1E-74</td>
<td>1 7/8&quot;</td>
<td>1 7/8&quot; to 2 1/4&quot;</td>
</tr>
</tbody>
</table>

Cylinder diameter - 1 3/8"

To order: see below example: 1E74-C4-RP3-626

Products covered by one or more of the following patents:
4,437,695 4,633,690 4,616,394

### 1E Rim Cylinder

Standard rim cylinder applications require the use of BEST's 1E rim cylinder series. BEST rim cylinders are interchangeable with other manufacturers' rim cylinders. BEST rim cylinders are machined from solid bar stock and are available in a variety of finishes. The standard package for the BEST rim cylinder includes cylinder, 1E-R3 and 1E-R5 rings, 1E-S2 spindle, clamp plate and clamp plate screws. BEST rim cylinders feature the BEST interchangeable core and may be masterkeyed into any existing Best system.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Cylinder Nomenclature</th>
<th>Dimension</th>
<th>Door Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder Diameter</td>
<td>1E-62</td>
<td>1 3/8&quot;</td>
<td>1 to 2 3/4&quot;</td>
</tr>
<tr>
<td></td>
<td>1E-72</td>
<td>1 3/8&quot;</td>
<td>1 3/8&quot; to 3&quot;</td>
</tr>
</tbody>
</table>

Cylinder diameter - 1 3/8"

To order: see below example: 1E72-S2-RP-626

### HOW TO ORDER

<table>
<thead>
<tr>
<th>STEP A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder Diameter</td>
<td>Core Housing</td>
<td>Function Code Length</td>
<td>Standard Mortise Code</td>
<td>Cam or Spindle</td>
<td>Rings</td>
<td>Standard Finishes</td>
<td>Options</td>
</tr>
<tr>
<td>1E-1 3/8&quot;</td>
<td>dummy</td>
<td>4- rim</td>
<td>Blank-standard</td>
<td>C4-standard cam</td>
<td>RP-rim cylinder</td>
<td>605</td>
<td>MC-marine construction</td>
</tr>
<tr>
<td>3E-1 1/2&quot;</td>
<td>6-6 pin</td>
<td>4- mortise</td>
<td>22-1 3/4&quot;</td>
<td>MS cam</td>
<td>RP1-tapered cyl.</td>
<td>610</td>
<td></td>
</tr>
<tr>
<td>5E-see page 10</td>
<td>7-7 pin housing</td>
<td>6- tapered mortise</td>
<td>24-1 1/2&quot; etc. up to 96-6&quot;</td>
<td>S2-standard spindle</td>
<td>RP2-6 pin mortise</td>
<td>612</td>
<td></td>
</tr>
<tr>
<td>8E-see page 7</td>
<td>see pages 4 &amp; 5 for special cyl.</td>
<td>see pages 4 &amp; 5 for special cyl.</td>
<td>see page 8</td>
<td>(special cams see page 6)</td>
<td>RP3-7 pin mortise</td>
<td>613</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RP4-3E mortise</td>
<td>625</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(special rings see page 9)</td>
<td>626</td>
<td></td>
</tr>
</tbody>
</table>

* For additional special mortise cylinders, see pages 4 and 5.
** Must specify keymark and number of keys or designate L/C for less core.
The 45H and 47H mortise locks meet or exceed the following standards:

American National Standards:
45H Series - ANSI A156.13,
Series 1000, Grade 1 Operational and Grade 2 Security.

47H Series - ANSI A156.13,
Series 1000, Grade 1 Operational and Grade 1 Security.

Underwriters Laboratories®
The 40H series is listed by Underwriters Laboratories for use on a 3 hour A label doors. These locks also carry the C-UL mark which is officially accepted in all of Canada, indicating compliance with appropriate Canadian standards and codes. The 47H series locks conform to UL 437 Standard for Key Locks, referencing Door Locks. The 1E7.34 cylinder used in the 47H series also conforms to UL 437 Standard for Key Locks, referencing High Security Cylinders, and is listed for Canada as well as the United States.

ANSI A250.13 Windstorm Standard

Miami-Dade County Code Compliance Office
The 40H series lock is certified for use in applications requiring a design pressure rating of ± 90 PSF for single doors and ± 50 PSF for double door openings.

Products protected by one or more of the following patents:
4873853 Other patents pending.

Case: 0.095 "cold rolled steel, 5 ¾ "H x ¾ "D x 4 ½" W.
Steel is zinc dichromate plated for corrosion protection.

Faceplate: Brass or bronze material, 8 "H x 1 ¼ "W x ½ "T.
Lock face automatically adjusts to proper bevel during installation.

Strike: Brass, bronze, or stainless steel base material,
4¾" x 1½" x ⅝". Fits standard door frame cut out as specified in ANSI A115.1. Universal (non-handed) strike and strike box combination supplied standard with lock. Handed strikes (for use without strike box) available for special order.

Backset: 2 ⅛"

Door Thickness: Standard lock configuration designed for doors 1 ¾ " thick. Thick door configuration available for doors up to 5 " thick (specify thickness when ordering).

**Certified**

**40H SPECIFICATIONS**

Latchbolt: Solid stainless steel, ¾ " throw. Latch is oil-impregnated for anti-friction operation. Reversible without opening case.

Deadbolt: Stainless steel, 1 " throw.

Auxiliary bolt: Stainless steel, non-handed.

Lever handle: Brass, bronze, or stainless steel base material.
Lever styles 3, 14, and 15 return to a minimum of 1/2 of door surface. Lever 16 does not return. Levers project 2 ¾" from door surface with H, J, R, S trim, 3 ¼ " with M, N trim.
Lever styles 3, 14, and 15 conform to California Title 19 and 24.

Rose: Wrought brass, bronze, or stainless steel base material.
H - Flat w/ round edge, 2 ½" diameter. R - Contoured w/ round edge, 2 ¾" diameter. S - Flat w/ beveled edge, 3 ¼" diameter.

Escutcheons: J - Wrought brass, bronze, or stainless steel base material, 7 ½ "H x 2 ½ "W x ½ "T. M & N - Forged brass or bronze, 8 "H x 2 ½ "W x ½ "T, through bolt mounted (no exposed screws outside).

Finishes:
• 605 - bright brass, clear coated
• 606 - satin brass, clear coated
• 611 - bright bronze, clear coated
• 612 - satin bronze, clear coated
• 613* - oxidized satin bronze, oil rubbed
• 618 - bright nickel plated, clear coated (brass base material)
• 619 - satin nickel plated, clear coated (brass base material)
• 622 - flat black coated (brass base material)
• 625 - bright chromium plated (brass base material)
• 626 - satin chromium plated (brass base material)
• 629 - bright stainless steel
• 630 - satin stainless steel
• 690* - dark bronze coated (brass base material)

* 613 finish is designed to wear over time, providing an "antique" appearance. 690 finish will continue as a dark brown appearance over time.

The following functions and trim styles may not be immediately available to order. Please consult your local BEST representative for specific details and timing.

Functions: C, CHB, H, RHB
Trims: M, N, S

The 47H and 49H series will not be available until third quarter 2005.
1. Solid one-piece stainless steel anti-friction latch provides 50% more surface contact with strike for superior strength and security. Reversible latch rotates 180 degrees for easy handling change without opening case. Precision-engineered curve provides enhanced cycle life with reduced wear to the strike.

2. Non-handed cylinder retainer and stainless steel auxiliary bolt for ease of changing hand.

3. Armored front completely surrounds latch and deadbolt providing increased lateral strength. Staked assembly design allows the armored front to self-align with the door bevel during installation.

4. Enhanced case integrity achieved through four case cover screws (one at each corner), plus interlocking armored front and cover design at the latch.

5. Roller bearing hub mechanism provides smooth, wear resistant operation.

6. Locking toggle includes clear indication of "locked" and "unlocked" states.

7. 40H case, cover, and armored front manufactured from 0.095" cold rolled steel for strength and durability.

8. Fusible link.

9. Four position hub toggle design determines whether each hub is always locked, always unlocked, or locked by key for easy handling change without opening case.

10. Lever return spring mechanism located in trim for enhanced protection against lever droop, providing a firm, positive return of the lever to the horizontal position.

11. Self-aligning trim mechanism for fast, easy, and accurate installation.

12. Curved lip strike and strike box assembly provides an aesthetic, non-handed solution to complement field reversible case.

13. Solid machined cylinder rings with tension spring provide resistance to wrenching of cylinder. Cylinder security screw prevents removal of cylinder without first removing interchangeable core.
### FUNCTIONS

<table>
<thead>
<tr>
<th>Function &amp; Diagram</th>
<th>Description</th>
<th>Inside Lever or Knob Locked by</th>
<th>Inside Lever or Knob Unlocked by</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Single Keyed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-Office</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>- Rotating inside lever, OR</td>
<td>Cannot be locked</td>
<td>Always unlocked</td>
</tr>
<tr>
<td></td>
<td>- Rotating outside lever—only when locking toggle is in unlocked position, OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Turning key in outside cylinder.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The latchbolt is deadlocked with an auxiliary deadlatch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB-Office</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td>- Rotating inside lever, OR</td>
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<td>Always unlocked</td>
</tr>
<tr>
<td></td>
<td>- Rotating outside lever—only when locking toggle is in unlocked position, OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Turning key in outside cylinder.</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>AT-Office</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Rotating inside lever, OR</td>
<td>Cannot be locked</td>
<td>Always unlocked</td>
</tr>
<tr>
<td></td>
<td>- Rotating outside lever—only when unlocked by key or turn lever, OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Turning key in outside cylinder.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The latchbolt is deadlocked with an auxiliary deadlatch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-Storeroom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Rotating inside lever, OR</td>
<td>Cannot be locked</td>
<td>Always unlocked</td>
</tr>
<tr>
<td></td>
<td>- Turning key in outside cylinder.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The latchbolt is deadlocked with an auxiliary deadlatch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-Classroom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Rotating inside lever, OR</td>
<td>Cannot be locked</td>
<td>Always unlocked</td>
</tr>
<tr>
<td></td>
<td>- Rotating outside lever—only when unlocked by key, OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Turning key in outside cylinder.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The latchbolt is deadlocked with an auxiliary deadlatch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHB-Classroom Holdback</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Rotating inside lever, OR</td>
<td>Cannot be locked</td>
<td>Always unlocked</td>
</tr>
<tr>
<td></td>
<td>- Turning key in outside cylinder.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Outside lever except when locked by outside key, OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Latchbolt held retracted by turning OS key while holding up US lever.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The latchbolt is deadlocked with an auxiliary deadlatch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-Dormitory</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>- Rotating inside lever, OR</td>
<td>Cannot be locked</td>
<td>Always unlocked</td>
</tr>
<tr>
<td></td>
<td>- Rotating outside lever—only when deadbolt is retracted OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Turning key in outside cylinder.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**HEAVY DUTY**
INTRODUCTION

The proper selection and application of exit hardware, in addition to safety, are major concerns to all responsible manufacturers. Exit devices are a critical part of a door opening or egress system and will provide safe and reliable service when properly applied and maintained. It is the policy of Von Duprin Division, Ingersoll-Rand Company, to design and manufacture exit devices to a high standard of quality and reliability in accordance with accepted U.S. domestic and international standards. All 98 and 99 series exit devices are UL listed for Accident Hazard or Fire Exit Hardware, and are tested in accordance to ANSI A156.3, 1994, Grade I.

It is intended that the information included in this publication, when properly used, will provide clear and reliable guidelines to the proper general selection and application. However, the scope of the information is necessarily limited.

Unusual operating conditions and environments and other external influences can affect the proper application of the products represented. Modifications of these products will also affect UL listings. It is recommended that whenever an unusual application condition exists, or when any modification of a product is considered, that our engineers review the application.

Application engineering services are available to help ensure proper selection or to review any areas where users of Von Duprin products may have questions.

Von Duprin push pad exit devices are available in two external surface styles, designated 98 Series and 99 Series.

The two styles are mechanically and dimensionally identical and provide a wide selection of appearance options.

99 Series features grooved mechanism case.

98 Series features smooth mechanism case.

THE QUIET ONE®

A fluid dampener decelerates the push pad on its return stroke and eliminates most noise associated with exit device operations. Furnished on all 98/99 series exit devices.
98 and 99 rim devices for all types of single doors and double doors with mullion, UL listed for accident hazard installations. Covers stock hollow metal doors with 86 or 161 cutouts.

**FEATURES**
- Nonhanded
- Field sizeable
- 3/4" (19mm) throw, latch bolt
- Latch bolt deadlocking
- Eight popular finishes
- Hex key dogging

**DIMENSIONS**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touchbar height to finished floor</td>
<td>39 3/4&quot; (995mm) at center</td>
</tr>
<tr>
<td>Touchbar projection — neutral depressed</td>
<td>3&quot; (76mm)</td>
</tr>
<tr>
<td></td>
<td>3 1/4&quot; (78mm)</td>
</tr>
<tr>
<td>Center case</td>
<td>8&quot; x 2 1/2&quot; x 2 1/4&quot; (203mm x 57mm x 70mm)</td>
</tr>
<tr>
<td>Device length — Short 3'</td>
<td>2'6&quot; to 3' (762mm to 914mm) door size</td>
</tr>
<tr>
<td></td>
<td>3'1&quot; to 4' (940mm to 1219mm) door size</td>
</tr>
</tbody>
</table>

**STRIKES AND FASTENERS**

Device is furnished with standard 299 strike in dull black finish. All necessary fasteners are included. Optional strikes and finishes are available. For strike applications, dimensions, and minimum door stile information refer to pages 22, 23.

A combination of fasteners are included for surface mounting and through bolting to trim on 1 3/4" (44mm) and 2 1/2" (57mm) thick doors.

**DEVICE OPTIONS**

- Electric latch retraction, page 24
- Pneumatic latch retraction, page 27
- Electric rim device, page 25
- Request to exit switch, page 26
- Latch bolt monitoring, page 26
- Signal switch, page 26
- Cylinder dogging, page 30
- Double cylinder, page 27

*For How-To-Order Information on all devices, see page 35.*
## VON DUPRIN®
### 98/99 Trim Selection

<table>
<thead>
<tr>
<th>Function</th>
<th>01 Pull Only</th>
<th>02 Pull When Dogged</th>
<th>03 Key Retracts Latch Bolt</th>
<th>04 Key Retracts Latch Bolt</th>
<th>05 Key Locks Thumbpiece</th>
<th>08 Key Locks Knob</th>
<th>08 Key Locks Lever</th>
<th>11 Key Locks Thumbturn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trim Number and Dimensions</td>
<td>9940T</td>
<td>9940NL</td>
<td>1104NL</td>
<td>(Pull Rejected)</td>
<td>9940TP</td>
<td>9941K</td>
<td>9942L</td>
<td>9741T</td>
</tr>
</tbody>
</table>

### Device/Trim Centerline To Finished Floor

<table>
<thead>
<tr>
<th>Projection</th>
<th>2&quot; (51mm)</th>
<th>2&quot; (51mm)</th>
<th>3&quot; (76mm)</th>
<th>3&quot; (76mm)</th>
<th>3&quot; (76mm)</th>
<th>3&quot; (76mm)</th>
<th>1&quot; (25mm)</th>
<th>1&quot; (25mm)</th>
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</thead>
<tbody>
<tr>
<td>Panic</td>
<td>98765</td>
<td>98765T</td>
<td>98765L</td>
<td>98765P</td>
<td>98765L</td>
<td>98765P</td>
<td>98765L</td>
<td>98765P</td>
</tr>
<tr>
<td>Fire</td>
<td>98765-F</td>
<td>98765-F</td>
<td>98765-F</td>
<td>98765-F</td>
<td>98765-F</td>
<td>98765-F</td>
<td>98765-F</td>
<td>98765-F</td>
</tr>
<tr>
<td>Ctr. Line</td>
<td>1965&quot; (50mm)</td>
<td>2955&quot; (75mm)</td>
<td>1955&quot; (50mm)</td>
<td>1955&quot; (50mm)</td>
<td>2955&quot; (75mm)</td>
<td>1955&quot; (50mm)</td>
<td>1955&quot; (50mm)</td>
<td>2955&quot; (75mm)</td>
</tr>
</tbody>
</table>

### Mortise Lock

<table>
<thead>
<tr>
<th>Surface Mounted Vertical Rod</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panic</td>
</tr>
<tr>
<td>Fire</td>
</tr>
<tr>
<td>Ctr. Line</td>
</tr>
</tbody>
</table>

### Concealed Vertical Rod

<table>
<thead>
<tr>
<th>Concealed Vertical Rod</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panic</td>
</tr>
<tr>
<td>Fire</td>
</tr>
<tr>
<td>Ctr. Line</td>
</tr>
</tbody>
</table>

### Concealed Vertical Rod W/ Door

<table>
<thead>
<tr>
<th>Three Point Latch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panic</td>
</tr>
<tr>
<td>Fire</td>
</tr>
<tr>
<td>Ctr. Line</td>
</tr>
</tbody>
</table>

### Additional S/N 8 Requirements

| 6 | 2 | 2 | 6 | 2 | 2 | 2 | 2 | 2 |

*Refer to additional lever or knob information, page 19.*
STANDARD TRIM

SERIES 990
Heavy 10 gauge (2.4mm) brass, bronze, or stainless steel. Available functions: 990DT, 990NL, and 990TP. Optional 990EO exit only trim plate is available in this series. When ordering with the exit device, use 990EOx990EO.

SERIES 992L and 991K
Lever trim has a forged brass 1/2" (19mm) thick escutcheon and is available in three operating options, 992LxDT, 992LxNL, and 992LxBE. Refer to operation options for additional information.

Knob trim has a forged brass 1/4" (19mm) thick escutcheon and is available in three operating options, 991KxDT, 991KxNL, and 991KxBE. Refer to operation options for additional information.

LEVER DESIGN OPTIONS

LEVER DESIGN OPTIONS

OPERATION OPTIONS — LEVER AND KNOB

Standard operation, key locks and unlocks lever or knob.

Night latch, key retracts latch bolt. Lever or knob is rigid. Use NL suffix, e.g., 992L-NL.

Blank escutcheon, lever or knob always active. Use BE suffix, e.g., 992L-BE.

Dummy trim, lever or knob rigid for pull operation. Use DT suffix, e.g., 992L-DT.

SERIES 370
Thumbtum control has a forged brass 7/16" (22mm) thick escutcheon. Often used with DT trim or pull.

OPTIONAL TRIM

SERIES 696
Narrow design 3/16" (5mm) thick brass, bronze, or stainless steel with flat pull grip. Available functions: 696DT, 696NL, and 696TP. When ordering with the exit device, specify trim. Example: 99NLx696NL.

SERIES 697
Narrow design 5/16" (5mm) thick brass, bronze, or stainless steel with round pull grip. Available functions: 697DT, 697NL, and 697TP. When ordering with the exit device, specify trim. Example: 99NLx697NL.

SERIES 392-7
Offset solid brass, bronze, or stainless steel 3/16" (19mm) wire pull. Through bolts to exit device.
**LCN 4040 SERIES**

The 4040 SUPER SMOOTHEEs is LCN's most flexible heavy duty closer designed for institutional and other rugged high traffic applications.

- Ten Million Cycles
- Cast Iron
- Forged Steel Arm
- Double Heat Treated Steel Pinion
- All Weather Fluid
- Non-Handed
- LCN's Fast™ Power Adjust
- Fast & Accurate Installation
- UL & ULC Listed

---

<table>
<thead>
<tr>
<th>MOUNTING</th>
<th>COVER</th>
<th>FINISH</th>
<th>CYLINDER</th>
<th>ARM FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP JAMB (PULL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOP JAMB (PUSH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARALLEL ARM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLASTIC</td>
<td></td>
<td></td>
<td>STANDARD</td>
<td></td>
</tr>
<tr>
<td>METAL</td>
<td></td>
<td></td>
<td>NON-SIZED</td>
<td></td>
</tr>
<tr>
<td>HARDWARE</td>
<td></td>
<td></td>
<td>DELAYED ACTION</td>
<td>120°</td>
</tr>
<tr>
<td>PLATED</td>
<td></td>
<td></td>
<td>STANDARD RANGE</td>
<td>120°</td>
</tr>
<tr>
<td>FINISHED METAL</td>
<td></td>
<td></td>
<td>DELAYED ACTION</td>
<td>180°</td>
</tr>
<tr>
<td>NON-SIZED</td>
<td></td>
<td></td>
<td>STANDARD RANGE</td>
<td>180°</td>
</tr>
<tr>
<td>ANTi-REVERSER</td>
<td></td>
<td></td>
<td>DELAYED ACTION</td>
<td>110°</td>
</tr>
<tr>
<td>REVERSIBLE</td>
<td></td>
<td></td>
<td>STANDARD RANGE</td>
<td>110°</td>
</tr>
<tr>
<td>CROWNING</td>
<td></td>
<td></td>
<td>DELAYED ACTION</td>
<td>110°</td>
</tr>
<tr>
<td>SSSGSHIELD</td>
<td></td>
<td></td>
<td>DELAYED ACTION</td>
<td>110°</td>
</tr>
</tbody>
</table>

---

- Standard 4040 series closer shipped with regular arm, standard plastic cover, and self-reaming and tapping screws. See 4040 Series pages 44 & 45 for options.
- Non-sized cylinder is adjustable for interior doors to 5'0" and exterior doors to 4'0".
- Closer mounts hinge side, top jamb, and parallel arm w/PA Shoe on either right or left swinging doors.
- Closer to meet ADA requirements. See 4040 Series page 46.
- Standard or optional custom powder coat finish.
- Optional plated finish on cover, arm, and fasteners.
- Optional SRI primer for installations in corrosive conditions.
- Optional designer series metal cover
- UL and ULC listed for self-closing doors without hold-open.
- Tested and certified under ANSI Standard A156.4, grade one.

---

**LCN CLOSERS**
121 W. RAILROAD AVE.
P.O. BOX 100
PRINCETON, IL USA 61356-0106
PHONE 800-325-2400
FAX 800-248-1400
www.lcn.com

---

*Close closer with less than 5.0 lbs opening force on 36" door

**Maximum opening/hold-open point with standard template

*** Advanced Variable Backcheck
Mounting details are the same as 4040 REGULAR or HOLD-OPEN except as listed below. 4040 closers ordered with EDA or CUSH arms include 4040-201 FIFTH HOLE SPACER to support the shoe.

**MAXIMUM OPENING**

EDA arm can be templated for points at: 110°.
- \( A_1 = 6\ 3/8" \) (162 mm)
- \( B_1 = 7\ 3/4" \) (197 mm)

or 180°.
- \( A_2 = 2\ 7/8" \) (73 mm)
- \( B_2 = 4\ 1/4" \) (108 mm)

Hold-open points up to maximum opening with HEDA arm.

CUSH arms can be templated for opening/hold-open point at:
- 85°.
  - \( A_1 = 7\ 1/16" \) (202 mm)
  - \( B_1 = 9\ 1/8" \) (232 mm)

90°.
- \( A_2 = 7\ 3/16" \) (183 mm)
- \( B_2 = 8\ 1/2" \) (216 mm)

100°.
- \( A_1 = 6\ 1/16" \) (154 mm)
- \( B_1 = 7\ 1/4" \) (184 mm)

or 110°.
- \( A_2 = 5\ 1/16" \) (129 mm)
- \( B_2 = 6\ 3/8" \) (162 mm)

Spring Cush dead stop points are approximately 5" more than templated stop point. Hold open at templated stop points.

**Clearance** for 4040-62EDA is 5 1/2" (140 mm) from door face. 6" (152 mm) for CUSH.

**Head Frame** flush or rebated requires CUSH FLUSH PANEL ADAPTER, 4040-419.

**CUSH ARM** requires SHOE SUPPORT, 4040-30 for fifth screw anchorage for narrow frames.

**Delayed Action** Add suffix "DEL" to selected cylinder (eg. 4041 DEL). Delays closing from maximum opening to:
- 115° with 180° template.
- 95° with 110° template.
- 85° with 100° template.
- 75° with 90° template.

Delay time adjustable up to approximately one minute.
LCN 4040 SERIES

**CYLINDERS**

**CYLINDER, 4041-3071**
Standard, non-handled cast iron cylinder assembly.

**COVERS**

**COVER, 4040-72**
Standard, non-handled plastic cover.

**METAL COVER, 4040-72MC**
Optional, handed cover. Required for plated finishes and custom powder coat finishes.

**LEAD LINED COVER, 4040-72LL**
Optional non-handled cover.

**DESIGNER SERIES METAL COVER, 4040-72DS1**
Optional, non-handled designer series metal cover.

**ARMS**

**REGULAR ARM, 4040-3077**
Non-handed arm mounts pull side or top jamb with shallow reveal. L4041 closer includes PA SHOE, 4040-62PA required for parallel arm mounting.

**PA SHOE, 4040-62PA**
Required for parallel arm mounting.

**LONG ARM, 4040-3077L**
Optional non-handled arm includes LONG ROD AND SHOE, 4040-79LR for top jamb mount.

**EXTRA LONG ARM, 4040-3077ELR**
Optional non-handed arm includes EXTRA LONG ROD AND SHOE, 4040-79ELR for top jamb mount with deep reveal.

**HOLD-OPEN ARM, 4040-3049**
Optional, non-handed arm mounts pull side or top jamb with shallow reveal, hold-open adjustable shoe. L4041 closer includes 4040-62PA shoe required for parallel arm mounting.

**LONG HOLD-OPEN ARM, 4040-3049L**
Optional non-handled arm includes LONG HEAD AND TUBE, 4040-304BL for top jamb mount.

**EXTRA DUTY ARM, 4040-3077EDA**
Optional, non-handed parallel arm features forged, solid steel main and forearm for potentially abusive installations.

Optional THICK HUB SHOE, 4040-62G for blade stop clearance.

Optional FLUSH TRANSOM SHOE, 4040-145 for single rebated installations. Optional shoes require special templating.

**HOLD-OPEN EXTRA DUTY ARM, 4040-3049EDA**
Optional handed arm provides hold-open function, adjustable at the shoe.

**CUSH-N-STOP ARM, 4040-3077CNS**
Optional, non-handed parallel arm features solid forged steel main arm and forearm with stop in soffit shoe.

**HCUSH ARM, 4040-3049CNS**
Provides hold-open function with templated stop/hold-open points. Handle controls hold-open function.

**SPRING CUSH ARM, 4040-3077SCNS**
Optional, non-handed parallel arm for abusive applications features solid forged steel main arm and forearm with spring loaded stop in the soffit shoe.

**SPRING HCUSH ARM, 4040-3049SCNS**
Optional, non-handed parallel arm for abusive applications features solid forged steel main arm and forearm with spring loaded stop in the soffit shoe. Handle controls hold-open function.
TABLE OF SIZES
4041 cylinder is adjustable from size 1 through size 6 and is shipped set to size 3.
Closing power of 4040 series closers may be adjusted 50%.

<table>
<thead>
<tr>
<th>EXTERIOR (and VESTIBULE) DOOR WIDTH</th>
<th>24&quot;</th>
<th>30&quot;</th>
<th>36&quot;</th>
<th>42&quot;</th>
<th>48&quot;</th>
<th>60&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>610mm</td>
<td>762mm</td>
<td>914mm</td>
<td>1067mm</td>
<td>1219mm</td>
<td>1524mm</td>
<td></td>
</tr>
</tbody>
</table>

*4041
Minimum Door Width

<table>
<thead>
<tr>
<th>INTERIOR DOOR WIDTH</th>
<th>24&quot;</th>
<th>34&quot;</th>
<th>36&quot;</th>
<th>42&quot;</th>
<th>48&quot;</th>
<th>52&quot;</th>
<th>60&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>850mm</td>
<td>955mm</td>
<td>955mm</td>
<td>1219mm</td>
<td>1219mm</td>
<td>1524mm</td>
<td>1524mm</td>
<td></td>
</tr>
</tbody>
</table>

*4041
Minimum Door Width

* Adjustable Size 1 thru 6

REDUCED OPENING FORCE 4040 CLOSERS

CAUTION! Any manual door closer, including those certified by BHMA to conform to ANSI Standard A156.4, that is selected, installed and adjusted based on ADA or other reduced opening force requirements may not provide sufficient power to reliably close and latch a door.

Refer to POWER OPERATORS section for information on systems that meet reduced opening force requirements without effecting closing power.

HOW-TO-ORDER

4040 SERIES CLOSERS

1. SELECT FINISH.

- Standard Powder Coat
  - Aluminum, Dark Bronze, Tan, Statuary, Light Bronze, Black, Brass.

  Closers will be shipped with:
  - STANDARD COVER,
  - REGULAR ARM,
  - SELF-REAMING and TAPPING SCREWS
  unless options listed below are selected.

CLOSER OPTIONS

- CYLINDER
  - Delayed Action (DEL)

- COVER
  - Lead Lined (LL)
  - Metal (specify right or left hand) (MC)
  - Designer Series Metal (non-handed) (DST1)

- FINISH
  - Custom Powder Coat (RAL)
    (handed metal cover required)
  - Plate Finish, US
    (handed metal cover required)
  - SR1 primer

- ARM
  - Regular w/62PA (Rw/PA)
  - Regular w/62A (R/62A)
  - Long (LONG)
  - Extra Long (DLONG)
  - Hold-Open (H)
  - Hold-Open w/62PA (Hw/PA)
  - Long Hold-Open (HLONG)
  - EDA (optional) -62G or -145
  - HEDA (specify right or left hand, optional) -62G or -145
  - Cush-N-Stop (CUSH)
  - HCush-N-Stop (HCUSH)
  - Spring Cush (SCUSH)
  - Spring HCush (SHCUS)

OPTIONAL SCREW PACKS

- TB" w/Self-Reaming and Tapping (TBSRT)
- Wood & Machine Screw (WMS)
- TB", Wood & Machine Screw (TWMS)
- TORX Machine Screw (TORX)
- TB" & TORX Machine Screw (TBRX)
  * Specify door thickness if other than 1 3/4".

INSTALLATION ACCESSORIES

- Plate, 4040-18
- Plate, 4040-18TL
- Plate, 4040-18G
- Plate, 4040-18A
- Plate, 4040-18DS1
- Plate, 4040-18TDSL
- Plate, 4040-18PADS1
- CUSH Shoe Support, 4040-30
- Blade Stop Spacer, 4040-61
- Auxiliary Shoe, 4040-62A
- Soffit Shoe, 4040-65
- PA Shoe Adapter, 4040-418
- CUSH Feed Panel Adapter, 4040-419

SPECIAL TEMPLATE

- ST-
**Standard Features**

- Concealed
- Doors may be single or double acting
- Non-handed
- Slide track design
- For use on exterior and interior doors
- Recommended for high traffic, heavy abuse installations
- Heavy shock absorber spring provides 5"-7" compression before dead stop
- Surface on/off knob on hold open models
- Stop, friction stay or hold open functions
- Complete screw packet allows for wood or metal door and frame applications
- For security areas torx screws, optional
- Standard architectural finishes
- Non-metal slide block and shock block
- 110° maximum opening
- 1-3/4" minimum door thickness, for hollow doors, note thickness when ordering
- LS option available for doors being used with electromechanical closers & floor closers with dead stop.

---

**Door Opening Chart (in inches)**

<table>
<thead>
<tr>
<th>Butts Offset Pivots</th>
<th>Center Hung Pivots</th>
<th>Friction</th>
<th>H.O.</th>
<th>Stop</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-28</td>
<td>30-36</td>
<td>1-116</td>
<td>1-126</td>
<td>1-136</td>
</tr>
<tr>
<td>28-1/16-33</td>
<td>36-1/16-41</td>
<td>1-216</td>
<td>1-226</td>
<td>1-236</td>
</tr>
<tr>
<td>33-1/16-38</td>
<td>41-1/16-46</td>
<td>1-316</td>
<td>1-326</td>
<td>1-336</td>
</tr>
<tr>
<td>39-1/16-43</td>
<td>46-1/16-50</td>
<td>1-416</td>
<td>1-426</td>
<td>1-436</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Butts Offset Pivots</th>
<th>Center Hung Pivots</th>
<th>Friction</th>
<th>H.O.</th>
<th>Stop</th>
</tr>
</thead>
<tbody>
<tr>
<td>43-1/16-48</td>
<td>51-1/16-56</td>
<td>1-516</td>
<td>1-526</td>
<td>1-536</td>
</tr>
</tbody>
</table>

*Butt hung only on this size door.*

**ANSI No.**

<table>
<thead>
<tr>
<th>Shipping Weight 4.5 lbs.</th>
<th>Friction</th>
<th>H.O.</th>
<th>Stop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C01511</td>
<td>C01541</td>
<td></td>
</tr>
</tbody>
</table>
### Latch Protector No. LP01

- **Material:** Stainless Steel
- **Finish:** US32D
- **Fastener:** 1/4 - 20 X 3/4" OH PH MS
- **Ordering:** Product number and finish.
- **Features:** Fits rose or escutcheon 3 1/2" wide or less, Non-handed.

<table>
<thead>
<tr>
<th>No.</th>
<th>Material Size</th>
<th>Gauge</th>
<th>Lock Type</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP01</td>
<td>1 1/2&quot; x 10&quot;</td>
<td>.105&quot;</td>
<td>mortise</td>
<td>1.6 lbs.</td>
</tr>
</tbody>
</table>

### Latch Protector No. LP02

- **Material:** Stainless Steel
- **Finish:** US32D
- **Fastener:** 1/4 - 20 X 3/4" OH PH MS
- **Ordering:** Product number and finish.
- **Features:** For Cylindrical Locksets Only size, Non-handed.

<table>
<thead>
<tr>
<th>No.</th>
<th>Material Size</th>
<th>CTC</th>
<th>Gauge</th>
<th>Lock Type</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP02</td>
<td>1-9/16&quot; x 6&quot;</td>
<td>4&quot;</td>
<td>.105&quot;</td>
<td>cylindrical</td>
<td>1.1 lbs.</td>
</tr>
</tbody>
</table>
Push and Pull Bars

These bars are available in all architectural finishes. The flat surface of #43 through #49 makes them ideal for engraving or logos. Please specify the center to center dimension, as all of these bars are made to order. The Series #47 push bar is available in a variety of combinations shown on the following pages. See our Rockwood Plus catalog for push and pull bars of a larger diameter.

<table>
<thead>
<tr>
<th>No.</th>
<th>Material</th>
<th>Base</th>
<th>Projection</th>
<th>Clearance</th>
<th>Weight</th>
<th>ANSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>3/8&quot; x 3&quot;</td>
<td>1.5&quot; x 4.5&quot; x 3/4&quot;</td>
<td>2&quot;</td>
<td>1/4&quot;</td>
<td>10.5 lbs.</td>
<td>J501</td>
</tr>
<tr>
<td>44</td>
<td>3/8&quot; x 3&quot;</td>
<td>3/4&quot; x 3&quot;</td>
<td>1 1/8&quot;</td>
<td>1/2&quot;</td>
<td>10.1 lbs.</td>
<td>J501</td>
</tr>
<tr>
<td>45</td>
<td>3/8&quot; x 3&quot;</td>
<td>flush</td>
<td>3/8&quot;</td>
<td>—</td>
<td>5.9 lbs.</td>
<td>J501</td>
</tr>
<tr>
<td>46</td>
<td>1&quot; round</td>
<td>2&quot; dia. x 3/4&quot;</td>
<td>2 1/4&quot;</td>
<td>1 1/8&quot;</td>
<td>8.4 lbs.</td>
<td>J501</td>
</tr>
<tr>
<td>47</td>
<td>1&quot; round</td>
<td>1&quot; dia.</td>
<td>2 1/4&quot;</td>
<td>1 1/2&quot;</td>
<td>8.0 lbs.</td>
<td>J501</td>
</tr>
</tbody>
</table>

Note: Need CTC Dimension before ordering.
Mop Plate — Kick Plate — Armor Plate
All Plates are Beveled on All Edges (unless otherwise specified)

Order Example:
10" x 34" - 630
10" Tall x 34" Wide  Satin Stainless Steel, .050" Standard Thickness

Edgings — Astragals — Sill Covers

190-197 DOOR EDGINGS
Stainless Steel
42" x 1-3/4" Door

Cut-Outs available for Butts & Latch Bolts

All finishes available
Finish Designations: (pages 14-17)
A mill finish aluminum
B mill finish extruded bronze (brass)
BDG bright-dip gold anodized aluminum
G dark bronze anodized aluminum
Q gold anodized aluminum
SN satin nickel anodized aluminum

Please refer to the listings under each posted or stocked finish. See page 17 for a complete list of all finishes and non-posted or stocked finishes. Consult the factory for the price and availability of non-posted finishes.

1710A 1710D
5" (127.0)

171A 171B 171BDG
171D 171G 171SN
5" (127.0)

172A 172B 172D 172G 172SN
6" (152.4)

176A 176B 176D 176G
7" (177.8)

2548A 2548D 2548G
8" (203.2)

254X4B
8" (203.2)

25A 2549D 2549G
9" (228.6)

FULLY ASSEMBLED UNLESS OTHERWISE SPECIFIED

VERTURA, CA 800-283-9988 PEMKO MEMPHIS, TN 800-824-3018
Saddle Thresholds

To use a saddle threshold in an offset condition, use an elevator (see page 15).

270A 270B 270D 270G
271A 271B 271D 271G
272A 272B 272D 272G 272SN
275A 275B 275D 275G
276A 276B 276D 276G
274A 274D 274G
2749A 2749D 2749G
2750A 2750D 2750G
All brush seals consist of densely compressed nylon filaments encased in high quality aluminum retainers. These products are ideally suited for hollow metal and wood door (in-door sweep, jamb /header gasketing, and split extrud's) applications. Also use Pemko's brush weatherstripping products on overhead doors, sectional doors, sliding doors, and automatic doors.

- All brush seals greatly reduce the infiltration of light, air, wind, rain, and snow; prevent heat loss; control the penetration of smoke and fumes.
- Some brush products are now available in painted white aluminum with white colored nylon brush (example: 18062PWB).
- The dense nylon filaments conform to the contours of every sealing surface, providing a superior seal with extremely low closing force.
- Brush retainer flexible down to -40°F and has a melting point above 400°F.
- UV stabilized, dependable, long-lasting, cost-effective.
- Nylon brush insert is designated by a "NB" following the finish code.
- All brush seals come with #6 x 5/8" stainless steel sheet metal screws.

### 180° Aluminum Retainers

<table>
<thead>
<tr>
<th>Model</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>18041CNB</td>
<td>1/4&quot;</td>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>18041DNB</td>
<td>1/4&quot;</td>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>18041GNB</td>
<td>1/4&quot;</td>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
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<tr>
<td>18041SNB</td>
<td>1/4&quot;</td>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
</tr>
</tbody>
</table>

### POSITIVE PRESSURE

- BHMA

---

- Brushed to specification and finish code.
- Fire Rated: 90 min. Fire Test in Accordance with UL Standards 1034, Part 4 and 551.
- POSITIVE PRESSURE

---

- This product does not come punched or drilled unless specified otherwise.

### 180° Aluminum Retainers

<table>
<thead>
<tr>
<th>Model</th>
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</thead>
<tbody>
<tr>
<td>18100CNB</td>
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<td>1/4&quot;</td>
<td>1/4&quot;</td>
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<tr>
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<td>1/4&quot;</td>
<td>1/4&quot;</td>
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<tr>
<td>18100GNB</td>
<td>1/4&quot;</td>
<td>1/4&quot;</td>
<td>1/4&quot;</td>
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<tr>
<td>18100PWB</td>
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<td>1/4&quot;</td>
<td>1/4&quot;</td>
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- BHMA

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<tr>
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<td>3/8&quot;</td>
</tr>
<tr>
<td>18137GNB</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
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<tr>
<td>18137PWB</td>
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</table>

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<td>13/6&quot;</td>
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<tr>
<td>18175PWB</td>
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### POSITIVE PRESSURE

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### 180° Aluminum Retainers

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### POSITIVE PRESSURE

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<tr>
<td>18400DNB</td>
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<tr>
<td>18400GNB</td>
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### 180° Aluminum Retainers

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<td>18400DNB</td>
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</tr>
<tr>
<td>18400GNB</td>
<td>4&quot;</td>
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</tbody>
</table>
SiliconSeal™ Adhesive Backed Fire / Smoke Gasketing

Extroded from high temperature silicone; effective between -100°F and 800°F.

Seals begin compressing at 1/4" [(S88), 5/16" (S77), 3/8" (S44)], and can all be compressed sufficiently to seal openings with 1/16" gaps, making door latching easy.

Self-extinguishing and non-toxic. Unaffected by sunlight, ozone, and ultraviolet rays.

Impervious to fungus and mildew, will not deteriorate under normal exposure.

Smoke tested by WYLE Laboratories in accordance with UL 1764-90, meets the requirements of NFPA 105 "Installation of Smoke Control Door Assemblies".

Meets FAR 25.853 Airworthiness Standards for Compartment Interiors.

Hot Smoke Seal™ and SiliconSeal™ – The Ideal Edge Sealing System

Numerous door system configurations have been tested – over 100 technical data sheets are available at www.pemko.com.

S44 silicon seal

- S44 is designed for tighter frames and demonstrates extremely low closing force.

S44D (dark bronze)

S44W (white)

S44 is available in: 17, 20', 21', 25', and 510' widths.

S44 is air infiltration tested.

PK33 PemkoPrene™ - Adhesive Backed Fire / Smoke Gasketing

Seals begin compressing at 3/16", and both can be compressed sufficiently to seal openings with 1/16" gaps, making door latching easy.

Excellent resistance to compression set, particularly at elevated temperatures and for extended periods of time.

Stays flexible between -70°F and 250°F with very high resistance to flex fatigue.

PK33 PemkoPrene™

- PK33 is designed for tighter frames and demonstrates extremely low closing force.

PK33BL (black)

PK33D (dark bronze)

PK33W (white)

PK33 is available in: 17', 20', 21', 25', and 510' widths.

PemkoPrene™ - Adhesive Backed Fire / Smoke Gasketing

Seals begin compressing at 3/16", and both can be compressed sufficiently to seal openings with 1/16" gaps, making door latching easy.

Excellent resistance to compression set, particularly at elevated temperatures and for extended periods of time.

Stays flexible between -70°F and 250°F with very high resistance to flex fatigue.

PK55 PemkoPrene™

- PK55 is designed for tighter frames and demonstrates extremely low closing force.

PK55BL (black)

PK55D (dark bronze)

PK55W (white)

PK55 is available in: 17', 20', 21', 25', and 510' widths.
O & M DATA SHEET
University of Alaska Fairbanks
Tok Center Renovation
Project No.: 2007057 TKRN

1. Item No.: 08710-4
2. Specification Section/Drawing No./Detail No.: 08710 _ _ _ _
3. Name of Item/Drawing Equipment No.: Warranties
4. Manufacturer/Model No.: ________________________________
5. Use and Location: ________________________________
6. Size/Capacity: ________________________________
7. Supplier: Aurora Construction Supply
8. Source of Spare Parts: Aurora Construction Supply
9. Provider(s) of Warranty Service: Aurora Construction Supply and Armstrong Construction
   Fairbanks, AK 99705
   North Pole, AK 99705
10. Subcontractor: None
11. Other Contractor Comments: None

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc
Reviewed By: [Signature]
Title: President
Date: 9/18/2007

*This information must be provided for all items. Be as specific as possible.
November 1, 2007

Armstrong Construction, Inc.
P.O. Box 56607
North Pole, AK 99705

Project: Tok Center Renovation
Project No. 2007057 TKRN

This is to certify that all finish hardware furnished on the referenced project is guaranteed to be free of defects in material and workmanship for a period of one (1) year from date of installation, except door closers which have a ten (10) year guarantee.

All hardware must be installed in accordance with installation instructions provided by the various manufacturers.

Sincerely,

Aurora Construction Supply, Inc.

R. L. Dick Engebretson
President
1. Item No.: 09652-1
2. Specification Section/Drawing No./Detail No.: 09652
3. Name of Item/Drawing Equipment No.: Maintenance Data
4. Manufacturer/Model No.: Roppe
5. Use and Location: 
6. Size/Capacity: 
7. Supplier: MacCheynes Carpets Plus
8. Source of Spare Parts: MacCheynes Carpets Plus
10. Subcontractor: None
11. Other Contractor Comments: None

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc
Reviewed By: [Signature]
Title: President
Date: 9/18/2007

This information must be provided for all items. Be as specific as possible.
700 SERIES WALL BASE
Type TP Thermoplastic Rubber

5. Product Limitations
Only an adhesive specifically recommended for Roppe 700 Series Wall Base should be used. Do not apply base over vinyl wall covering or epoxy paint. Heavy sunlight penetration from direct or glass-filtered sources may cause fading. All-purpose cleaners/disinfectants allowed to dry on the base may cause staining. During routine floor maintenance, cleaners with acids may stain base. Base should be wiped off with a soft cloth or sponge moistened with clean water.

6. Installation
NOTE: Roppe’s Acrylic Cove Base Adhesive must be used with this product.
1. Required materials: Sharp utility knife, a hand roller, a 1/8” (.3175mm) notched trowel or wall base cartridge gun, and the wall base adhesive.
2. The adhesive, base, and room temperature should be at least 65 degrees F during application and for at least 24 hours before and after the application. If you are installing vinyl roll base, it should lie flat for 24 hours before application.
3. IMPORTANT: Wall base CANNOT be used over vinyl wall covering. If needed to install on a wall with vinyl wall covering, you must cut the wall covering leaving a 1/4” margin below where the top of the base will be.
4. Make sure that the wall surface is clean, dry, and free of dust, dirt, and loose paint. Wetch for dusty plaster walls or old adhesives. Plaster walls must be structurally sound and smooth. Drywall seaming compound must be smooth.
5. The gap between the floor and the wall should be no more than 1/4”.
7. Spread the adhesive onto the back of the base with an 1/8” notched trowel. Leave a 1/4” space at the top of the base when spreading the adhesive. A wall base cartridge gun with the proper tip can be used.
8. Press the base into place immediately after applying the adhesive. The adhesive MUST NOT “skin over.” Use a hand roller to press the base and adhesive to the wall. Roll the base toward the last installed piece. This will avoid “shrinkage” problems and gaps between sections.
9. Butt ends firmly together, so that the top of the base fits tightly against the wall.

REMEMBER: NEVER, NEVER stretch the wall base during installation.

7. Maintenance
Roppe 700 Series Wall Base can be routinely cleaned by wiping with a soft cloth dampened with warm water.
CAUTION: Coarse cleaning materials and/or harsh cleaning agents may damage the surface of the base.

8. Warranty
LIMITED WARRANTY
For a period of one (1) year from date of shipment, Roppe Corporation makes the following warranty on all first-quality products:

The merchandise will conform to the contract description; it will be of fair and average quality within the description; it will conform to a sale by sample with only such reasonable variance as is acceptable in the trade; it is fit for the ordinary purposes for which the product is used; and it will be adequately packaged to conform to the label.

Any defective material will be replaced at no charge if the defect is found prior to installation. If a defect is found after installation, all of the above warranties shall be void unless the proper Roppe brand of adhesive has been used on the installation, and the material has been installed and maintained in accordance with Roppe’s instructions.

ROPPE DOES NOT WARRANT: The exact matching of shade, color, or mottling; or any expressed or implied promise made by any salesman or representative.

Purchaser must notify Roppe Corporation, R.O. Box 1158, 1802 N. Union Street, Fostoria, Ohio U.S.A.; phone number 419-435-8546, of any claimed defect. Any defective material that has been installed using the proper Roppe brand of adhesive will be replaced free of charge, subject to the following conditions: Roppe reserves the right to inspect the manner and quality of installation of its product claimed defective. Roppe assumes no liability for labor costs in the installation of its products claimed defective. The purchaser must notify Roppe Corporation at its corporate address listed below immediately upon learning of the defect, subject to the following notification procedure:

The consumer must notify Roppe Corporation, R.O. Box 1158, 1802 N. Union Street, Fostoria, Ohio 44830, U.S.A.; phone number 419-435-8546, within ninety (90) days after claimed defect is discovered. Notification of Roppe Corporation shall be by ordinary U.S. mail, telephone, or any other reasonable means of communication.

EXCLUDED FROM WARRANTY
1. Sales of “Seconds,” “Off Goods,” or other irregular (non-first-quality) flooring material. With respect to “Seconds” or “Off Goods,” such are sold “as is,” seller makes no warranties whatsoever expressed or implied, with respect thereto, including warranties of merchantability or fitness for a particular purpose.
2. Problems caused by moisture, hydrostatic pressure, or alkali in the subfloor.
3. Problems caused by use and installation contrary to Roppe recommendations.
4. Labor on material installed with obvious defects.
5. Damage to flooring products from high heels, shoe spikes, or spiked heels.
1. Item No.: 09652

2. Specification Section/Drawing No./Detail No.: 09652

3. Name of Item/Drawing Equipment No.: Warranty

4. Manufacturer/Model No.: Roppe 1-1158-4730

5. Use and Location:

6. Size/Capacity:

7. Supplier: MacCheynes Carpets Plus

8. Source of Spare Parts: MacCheynes Carpets Plus

9. Provider(s) of Warranty Service: Roppe, MacCheynes Carpets Plus and Armstrong Construction

10. Subcontractor: None

11. Other Contractor Comments: None

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc

Reviewed By: [Signature]

Title: President

Date: 9/18/2007

*This information must be provided for all items. Be as specific as possible.
5. Product Limitations

Only an adhesive specifically recommended for Roppe 700 Series Wall Base should be used. Do not apply base over vinyl wall covering or epoxy paint. Heavy sunlight penetration from direct or glass-filtered sources may cause fading. All-purpose cleaners/disinfectants allowed to dry on the base may cause staining. During routine floor maintenance, cleansers with acids may stain base. Base should be wiped off with a soft cloth or sponge moistened with clean water.

6. Installation

NOTE: Roppe's Acrylic Cove Base Adhesive must be used with this product.

1. Required materials: Sharp utility knife, a hand roller, a 1/8" [3.175mm] notched trowel or wall base cartridge gun, and the wall base adhesive.

2. The adhesive, base, and room temperature should be at least 65 degrees F during application and for at least 24 hours before and after the application. If you are installing vinyl roll base, it should lie flat for 24 hours before application.

3. IMPORTANT: Wall base CANNOT be used over vinyl wall covering. If needed to install on a wall with vinyl wall covering, you must cut the wall covering and expose the wall surface. Cut the wall covering leaving a 1/4" margin below where the top of the base will be.

4. Make sure that the wall surface is clean, dry, and free of dust, dirt, and loose paint. Watch for dusty plaster walls or old adhesives. Plaster walls must be structurally sound and smooth. Drywall seams must be smooth.

5. The gap between the floor and the wall should be no more than 1/4".

6. Spread the adhesive onto the back of the base with an 1/8" notched trowel. Leave a 1/4" space at the top of the base when spreading the adhesive. A wall base cartridge gun with the proper tip can be used.

7. Press the base into place immediately after applying the adhesive. The adhesive MUST NOT "skin over." Use a hand roller to press the base and adhesive to the wall. Roll the base toward the last installed place. This will avoid "shrinkage" problems and gaps between sections.

8. Butt ends firmly together, so that the top of the base fits tightly against the wall.

REMEMBER: NEVER, NEVER stretch the wall base during installation.

7. Maintenance

Roppe 700 Series Wall Base can be routinely cleaned by wiping with a soft cloth dampened with warm water.

CAUTION: Coarse cleaning materials and/or harsh cleaning agents may damage the surface of the base.

8. Warranty

LIMITED WARRANTY

For a period of one (1) year from date of shipment, Roppe Corporation makes the following warranty on all first-quality products:

The merchandise will conform to the contract description; it will be of fair and average quality within the description; it will conform to a sale by sample with only such reasonable variation as is acceptable in the trade; it is fit for the ordinary purposes for which the product is used; and it will be adequately packaged to conform to the label.

Any defective material will be replaced at no charge if the defect is found prior to installation. If a defect is found after installation, all of the above warranties shall be void unless the proper Roppe brand of adhesive has been used on the installation, and the material has been installed and maintained in accordance with Roppe's instructions.

ROPPE DOES NOT WARRANT: The exact matching of shade, color, or mottling; or any expressed or implied promise made by any salesman or representative.

The purchaser must inform Roppe Corporation, P.O. Box 1158, 1602 N. Union Street, Fostoria, Ohio U.S.A.; phone number 419-435-8546, of any claimed defect. Any defective material that has been installed using the proper Roppe brand of adhesive will be replaced free of charge, subject to the following conditions: Roppe reserves the right to inspect the manner and quality of installation of its product claimed defective. Roppe assumes no liability for labor costs in the installation of its products claimed defective. The purchaser must notify Roppe Corporation at its corporate address listed below immediately upon learning of the defect, subject to the following notification procedure:

The consumer must notify Roppe Corporation, P.O. Box 1158, 1602 N. Union Street, Fostoria, Ohio 44830, U.S.A.; phone number 419-435-8546, within ninety (90) days after claimed defect is discovered. Notification of Roppe Corporation shall be by ordinary U.S. mail, telephone, or any other reasonable means of communication.

EXCLUDED FROM WARRANTY

1. Sales of "Seconds," "Off Goods," or other irregular (non-first-quality) flooring material. With respect to "Seconds" or "Off Goods," such are sold "as is." Seller makes no warranties whatsoever expressed or implied, with respect thereto, including warranties of merchantability or fitness for a particular purpose.

2. Problems caused by moisture, hydrostatic pressure, or alkali in the subfloor.

3. Problems caused by uses and installation contrary to Roppe recommendations.

4. Labor on material installed with obvious defects.

5. Damage to flooring products from high heels, shoe spikes, or spiked heels.
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<td>Specification Section/Drawing No./Detail No.: 12491</td>
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<td>3.</td>
<td>Name of Item/Drawing Equipment No.: Maintenance Data</td>
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<td>4.</td>
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<td>5.</td>
<td>Use and Location:</td>
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<td>6.</td>
<td>Size/Capacity:</td>
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<td>Supplier: Commercial Contractors Inc.</td>
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<td>8.</td>
<td>Source of Spare Parts: Commercial Contractors Inc.</td>
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<tr>
<td>9.</td>
<td>Provider(s) of Warranty Service: Armstrong Construction, Springs Window Fashions LP</td>
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<td>10.</td>
<td>Subcontractor: None</td>
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<td>11.</td>
<td>Other Contractor Comments: None</td>
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</table>

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc

Reviewed By: [Signature]

Title: President

Date: 9/18/2007

This information must be provided for all items. Be as specific as possible.
Window Treatment Horizontal Blinds
Bali® CustoMiser™ Mini Blinds

thermoplastic. The tilter shall be designed for smooth low friction operation and shall incorporate a clutch mechanism to eliminate damage due to over tilting. Tilter shall be a snap-in component allowing for field removal if required.

a. Tilt Wand: The tilt wand shall be a clear polycarbonate hollow rod, with a hexagonal shape measuring approximately 1/4-inch across the points, providing a positive, comfortable grip. The wand shall hang vertically by its own weight and should be of sufficient length for easy access and operation. Wand shall be attached to the tilter shaft by means of a spring clip and shall be easily detached and reattached in the field.

b. Tilt Bin: An optional tilter bin shall be attached to the tilter using a piece of a wand link for tilter shaft link with field provision for pull lock for operation.

c. Tilt Limits: An optional single-range tilter limiter shall allow a select range of tilting operation including a mixed limit if specified.

9. Tilt Rod: The tilt rod shall be electro-zinc coated solid steel, 0.165-inch square in cross section and shall provide instant tilting response.

10. Braided Ladders (Slat Supports): Blinds shall have braided ladder which will assure proper control with adequate overlap of slats. Distance between end ladder and end of slats will not exceed 6 inches; distance between braided ladders shall not exceed 24 inches.

a. Braided Ladder Material: Material shall be 100% high tenacity polyester yarn. Vertical components shall not be less than 0.045-inch nor greater than 0.065-inch diameter which will provide maximum strength and flexibility with minimum stretch. Horizontal component, or rungs, shall be not less than two threads and shall be approximately 31.0mm long. Standard ladder will provide 22.5mm spacing between slats. Optional 20 and 21.5mm spacing is available. Ladders shall be sufficient length for bottom of blind to hang with a tolerance of plus one-half minus zero inches of specified length. Ladders shall be dyed to Bali color standard.

11. Lift Cords: Bali lift cords shall be braided with polyester jacket and center core or an approved equal construction. Size of chord shall be 1.4mm. Cords shall be detachable, if required, and shall be of sufficient length to properly control the raising or lowering of the blind. Lift cords shall be equipped with plastic tassels. Cord ends shall be securely anchored to the bottom and it shall be possible to detach and attach cords. Stringing arrangements shall comply with Bali assembly standards set for the size and weight of the blind. Cords shall be dyed to Bali color standard.

12. Cord Lock and Tilter Operation Locations:

a. Bali CustomMiser Blinds shall be made with the following cord lock and tilter operation locations when viewed from within the room:
   1) Tilter at left, cord lock at right (standard).
   2) Cord lock at left, tilter at right (reverse).
   3) Tilter and cord lock at left (both left).
   4) Tilter and cord lock at right (both right).

b. On blinds less than 13 7/8-inches wide, only options 1 and 2 above apply.

13. End Support Brackets: The installation brackets with hinged looking cover shall be treated steel and shall have a coat of vinyl primer with a finished coat of polyester baked enamel in color to match headrail. A pair of these brackets shall support ends of headrail securely. The brackets shall permit easy removal of blind. Each bracket shall be installed with a minimum of two installation screws. Optional turn clip pivot brackets shall be provided for mounting headrail of blind within extended aluminum blind pockets.


15. Extension Brackets: Optional extension brackets are available.

16. Hold-Down Brackets: Optional universal hold-down brackets for sill or jamb installations are available.

17. End Stiffeners:
   a. To add rigidity to the headrail, electroplated steel end stiffeners shall be inserted at each end of the headrail.
   b. To assure a secure installation, to eliminate lateral movement, and to center the blind in the window, each and stiffener shall have a lateral adjustment tab.

18. General: The blind shall be free of sharp edges, burrs or other defects which might be harmful. When other materials result in improved specifications, they may be adopted.

19. Size Limitations:
   a. Standard widths: 12-143 3/4-inches (single blind on one headrail)
   Narrow between 5 1/2-inches and 11 7/8-inches available with engineering approval and normal limitations on performance and control locations. Inquire for details.
   b. Maximum drop: 126 inches, longer drops up to 150” available with engineering approval and normal performance limitations. Inquire for details.

20. Color: Color of headrail, bottomrail, ladder, cord and plastic accessories shall coordinate with slats.

2.02 FABRICATION

A. Prior to fabrication, verify actual opening dimensions by on-site measurement. Calculate blind dimensions to fit within specified tolerances.

B. Fabricate blinds to fit openings from head to sill and jamb-to-jamb. Locate blind divisions at millunons.

C. Fabricate blinds to fill all exterior window openings except at doors, door sidelights and transoms unless noted.

PART 3—EXECUTION

3.01 INSPECTION: Verify that the work area in which the blinds will be installed is free of conditions that interfere with blind installations and operations. Begin blind installation only when unsatisfactory conditions have been corrected.

3.02 INSTALLATION

Install blinds in accordance with manufacturer's procedures except as otherwise specified herein.

B. Install Intermediate support brackets and extension brackets as needed to prevent deflection in headrail.

C. Install blinds with adequate clearance to permit smooth operation of blinds and any sash operators.

D. Set tilt and lift controls. Demonstrate blinds to be in smooth, uniform working order.

3.03 CLEANING

A. Clean soiled blind surfaces with a mild soap solution. Do not use steam, hot water, bleach or any abrasive or solvent-based cleaners. Do not wash metallic colors.

B. To ensure proper drying, provide adequate ventilation for blinds, remove bottomrail plastic end caps, and tip headrail and bottomrail to drain water.

3.04 HORIZONTAL MINI BLIND SCHEDULE:

Provide blinds at the following locations: listing of blind locations, different options, types, accessories and colors.)
1. Item No.: 12491-

2. Specification Section/Drawing No./Detail No.: 12491

3. Name of Item/Drawing Equipment No.: Warranty

4. Manufacturer/Model No.: Bali Customiser - Springs Window Fashions LP

5. Use and Location:

6. Size/Capacity:

7. Supplier: Commercial Contractors Inc.

8. Source of Spare Parts: Commercial Contractors Inc.

9. Provider(s) of Warranty Service: Commercial Contractors Inc. and Armstrong Construction, Springs Window Fashions LP

10. Subcontractor: None

11. Other Contractor Comments: None

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc

Reviewed By: [Signature]

Title: President

Date: 9/18/2007

'This information must be provided for all items. Be as specific as possible.'
**Horizontal Mini Blind Specification Compliance**

To ensure performance standards for horizontal mini blinds, both federal and private sectors have created reference product specifications to maintain a high quality level for mini blind products used in commercial applications. Bali Horizonal mini blinds are in compliance with these reference specifications. The Bali S3000, Classics, Customiser® and Apartment mini blinds conform to the Federal Specification AA-V-00200B of June 5, 1973 for Type II Venetian Blinds and also with the American Window Covering Manufacturer’s Association Commercial Item Description Specification for 1” Horizontal Slat Venetian Blinds, Document 1029-86.

**Life Safety**

Life Safety is a critical component in product selection. Springs Window Fashions provides a wide range of products that excel in this area, offering you a choice in the aesthetics, functionality, sun and glare control you require.

Our Bali 1” and 2” aluminum horizontal blinds are inherently nonflammable due to the nature of the components, chiefly steel and aluminum, and it is our opinion that they are one of the best choices for use in commercial and residential environments with regard to life safety, including the categories of fire resistance, fuel contribution, smoke development and toxicity of the by-products of combustion.

**Our Graber® Vertical Blinds**

are available in a wide range of FR louver choices that comply with NFPA 701 large and small scale tests. All of our standard PVC louvers meet the requirements of the NFPA 701-96 Large Scale Test. Our Brighton, Kinetics, Rain, Jewel and Mesh fabric styles meet the requirements of the NFPA 701-99 Small Scale Test. Our Brighton fabric is also available on our Graber EvenPleat® and FashionPleat® pleated shades.

In addition, our Graber 2” Lake Forest and 2” Designer Vinyl horizontal blinds meet the requirements of the NFPA 701-96 Large Scale Test.

All products manufactured by Springs Window Fashions meet or exceed the safety guidelines developed for window treatments by The Window Covering Manufacturer’s Association and the Consumer Product Safety Commission. In line with this, we use lead free paint and PVC in our horizontal and vertical products in compliance with the Consumer Product Safety Commission’s guidelines on lead content.

**Product Warranty Information**

Springs Window Fashions' window treatments are designed, engineered and manufactured to strict quality standards. We back our commercial window treatments with the following warranties.

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Limited Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bali® Aluminum Horizontal</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Bali Apartment Mini</td>
<td>1 year</td>
</tr>
<tr>
<td>Bali 2” Aluminum School Blinds</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Graber® Wood Blinds - Headrail</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Graber Wood Blinds - Slats</td>
<td>5 year</td>
</tr>
<tr>
<td>Nanik® Wood Blinds - Headrail</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Nanik Wood Blinds - Slats</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Nanik Between the Glass</td>
<td>5 year</td>
</tr>
<tr>
<td>Graber Composite</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Graber Lake Forest® Blinds</td>
<td>5 year</td>
</tr>
<tr>
<td>Graber 2” Vinyl - Headrail</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Graber 2” Vinyl Slats</td>
<td>3 year</td>
</tr>
<tr>
<td>Graber Ultra-Vue® Headrail</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Graber Super-Vue® Headrail</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Graber Dura-Vue® Headrail</td>
<td>10 year</td>
</tr>
<tr>
<td>Graber Vertical Louvers</td>
<td>3 year</td>
</tr>
<tr>
<td>Bali Solar Shades - Roller System</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Bali Solar Shades - Shade Fabrics</td>
<td>5 year</td>
</tr>
<tr>
<td>Graber Cellular &amp; Pleated Headrail</td>
<td>Lifetime</td>
</tr>
<tr>
<td>Graber Cellular &amp; Pleated Fabrics</td>
<td>3 year</td>
</tr>
</tbody>
</table>

*Springs' limited warranty warrants the material and workmanship of products for the duration of the specified warranty time period. This warranty does not cover damage due to accidents, misuse, abuse, improper installation, alterations, or improper cleaning.*
1. Item No.: 12484 -

2. Specification Section/Drawing No./Detail No.: 12484

3. Name of Item/Drawing Equipment No.: Maintenance Data

4. Manufacturer/Model No.: Armstrong Commercial Flooring

5. Use and Location:

6. Size/Capacity:

7. Supplier: MacCheynes Carpets Plus

8. Source of Spare Parts: MacCheynes Carpets Plus

9. Provider(s) of Warranty Service: Armstrong Commercial Flooring, MacCheynes Carpets

10. Subcontractor: None

11. Other Contractor Comments: None

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc

Reviewed By: [Signature]

Title: President

Date: 9/18/2007

This information must be provided for all items. Be as specific as possible.
I DAILY CLEANING

WHY?
It is essential to remove dry soiling at least once a day - more often if necessary to stop it from building up.

HOW?
The most effective method is to use vacuum cleaners that incorporate a mechanically driven rotating brush or suction-only machines with a rotating brush attachment. Vacuum slowly and in all directions across the matting, to get the full effect of the combined suction and brushing.

AVOIDING PROBLEMS
If vacuuming doesn’t remove the dry soiling, check for these causes:
- Worn brushes or the wrong brush height – it is essential that the brush makes contact with the pile of the matting
- Brush not rotating properly – a loose drive belt will weaken the power of the brushing
- Blocked or obstructed airways affecting suction power
- Dust bag/collector in need of emptying.

I TOP-UP CARE

WHY?
High traffic areas need additional attention, to remove concentrated surface soiling and reduce the appearance of ‘traffic lanes’. If the methods below are used regularly, they can increase the gaps between scheduled maintenance – especially on light or plain colours.

HOW?
DRY EXTRACTION
This method uses a moist compound that is impregnated with water, detergent and safe-to-use solvents. After dry vacuuming the area to be cleaned, brush the compound through the pile. This must be done using a designated applicator, with counter-rotating brushes. Leave the compound for a short while to release and absorb the soiling, then give the area a thorough dry vacuuming to remove the compound.

This can be repeated as many times as necessary to remove the soiling.

AVOIDING PROBLEMS
Be careful to avoid a build up of compound after several applications.

HOW?
CYLINDRICAL BRUSH EXTRACTION
This method also uses machines with counter-rotating brushes, but this time a proprietary carpet cleaning solution is brushed into the pile and the dirty water returned straight to the machine.

After dry vacuuming the area to be cleaned, pass the machine over it as many times as needed to remove visible soiling. Detergent residues must then be removed by using the machine to rinse the area with clean warm water only.

I SCHEDULED MAINTENANCE

WHY?
At intervals, the matting should be treated with a deeper cleaning process called ‘Hot water extraction’. This removes soiling from the base of the pile and restores the surface texture to optimise its “clean-off” performance. Factors like the type and amount of traffic, as well as the effectiveness of Daily Cleaning and Top-up Care will govern how often this deep cleaning is needed.

HOW?
This process can be carried out using either a hot water spray extraction machine or a 3-in-1 spray and brush machine.

After dry vacuuming the area to be cleaned, treat any heavily soiled parts with a proprietary pre-spray (for polyamide pile floorcoverings). Use a stiff brush to agitate the pile and leave the pre-spray to soak into the soiled material for several minutes. Then use the machine over the whole area to be cleaned.

AVOIDING PROBLEMS
- The use of neutral crystalline detergents is recommended (follow manufacturer’s instructions on dilution).
- Ensure that all detergent residues are removed by thoroughly rinsing with clean water.
- Speed up drying by making sure the area is well ventilated.
- Allow the matting to dry before it is put back into use.
SPOT CLEANING

WHY?
When spillages happen it is important to deal with them as quickly as possible, to reduce the damage and make them easier to clean up.

HOW?
This depends on the nature of the spillage.

Dry spillages
☐ Use something blunt, such as a plastic scraper, to gently remove any loose soiling from the surface of the pile and then dry vacuum to clear any remaining particles from within the pile.

Thickened substances
☐ Gently clear away the spillage from the surface with a blunt scraper. Treat what is left of the spillage with a proprietary carpet spot-cleaner (for polyamide pile floorcoverings) and rinse with clean water. Blot or scrape out as much of the liquid as possible into absorbent material and repeat the treatment, rinsing and blotting as many times as necessary, then allow to dry.

Wet spillages
☐ Use absorbent material to blot up as much of the liquid as possible. Treat what is left of the spillage with a proprietary carpet spot-cleaner (for polyamide pile floorcoverings) and rinse with clean water. Blot again and repeat the treatment, rinsing and blotting as many times as necessary, then allow to dry.

AVOIDING PROBLEMS
☐ Oily and sticky patches are especially important to treat quickly, as they will cause patchy discoloration.
☐ For dry spillages that contain substances that could leave a stain, follow the procedure and then give a thorough clean using a hot water extraction machine, with plenty of water.
☐ Prevent premature re-soiling by rinsing thoroughly with clean water after using detergent.
☐ Carry out spot cleaning every time the need arises.
☐ When multiple or large spillages occur, carry out a water extraction clean to make sure that any leftover soiling and detergents are removed.

REMOVING CHEWING GUM
Two types of chewing gum removers are available on the market: hardening agents and softening agents. For removal from Coral, use a chewing gum remover that will harden the gum. Scrape the gum from the mat and vacuum afterwards.

PLEASE NOTE: avoid using chemicals that contain chlorinated hydrocarbons and bleaching/oxidising agents on all Coral products.
1. Item No.: 12484-2
2. Specification Section/Drawing No./Detail No.: 12484
3. Name of Item/Drawing Equipment No.: Warranty
4. Manufacturer/Model No.: Armstrong Commercial Flooring
   Lancaster, PA 17604
5. Use and Location:
6. Size/Capacity:
7. Supplier: MacCheynes Carpets Plus
   8000 Pegar
   Joplin, MO 64805
8. Source of Spare Parts: MacCheynes Carpets Plus
9. Provider(s) of Warranty Service: Plus and Armstrong Construction
   North Pole, AK 99705
10. Subcontractor: None
11. Other Contractor Comments: None

CONTRACTOR REVIEW: Contractor: Armstrong Construction, Inc
Reviewed By: [Signature]
Title: President
Date: 9/18/2007

'This information must be provided for all items. Be as specific as possible.'