



DKS
Steel Door & Frame System, Inc.

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DKS Customers
Interested Parties
State and Local Authorities

Subject: DKS Steel Door and Frames Systems, Inc., ITS / Warnock Hersey Procedural Specification, Certification, and Inspection.

All DKS products are built to specification under Intertek / Warnock Hersey procedural report and manufacturing standard No. 3053378 and as amended November 29, 2004 and June 30, 2006. Materials comply to UL 10 (b) and (c), UBC 7-2 (1997) Part 1, NFPA 252, CAN/ULC S104, ASTM E2074-00 and is in compliance with ANSI 250.4 and ANSI 250.8.

DKS product meets or exceeds all SDI standards and is an affiliate member in good standing of HMMA (Hollow Metal Manufacturers Association) Division of NAAMM (National Association of Architectural Metal Manufacturers).

DKS products are certified by the WHI mark including: Positive pressure (S) Smoke, and 20 minute to 3 hour fire ratings up to a maximum size of 8'0 X 8'0 in pair applications @ 3 hours with polystyrene or honeycomb cores. Available gauges are 16, 18, and 20 gauge cold rolled or A40 hot dipped galvanized materials. The complete list of products and shop services are available from our Commerce, California Warehouse and Distribution facility.

Attached is our "Door Installation" usage guide for all category type "A" doors.

Thank You,

DKS Steel Door and Frame Products, Inc.
2142 Tubeway Avenue
Commerce, California 90040-1614

DKS STEEL DOORS CATEGORY A

INTERTEK TESTING SERVICES LISTING REPORT NO. 3053378

DKS STEEL DOOR AND FRAME SYSTEMS, INC.

DOOR INSTALLATION INSTRUCTIONS

Doors described in this procedure meet the requirements for both positive and neutral pressure fire tests, ULI10 (c), UBC 7-2 (1997) PART 1, NFPA 252, ASTM EO274-00.

This includes the DKS Series 6000, 9000, 1000, 1100, 1200, 1300, 1400, 1600, 1700, 1800, 1900 and 2000 Series doors as published. These doors are category "A" doors (no additional edge sealing system is required).

This category includes doors which do not require the use of special frames (category C) or add on edge seal systems (category G) to meet positive pressure fire test requirements.

All assemblies are identified by a label or marking bearing the wording "Listed Product", a time interval temperature rise (if applicable), a serial number, and the Warnock Hersey certification mark.

Complete statements of positive pressure, smoke and draft control, temperature rise, fire exit hardware application and manufacturing are available in detail in Intertek Testing/Warnock Hersey report no. 3053378.

DKS Steel Door and Frames Systems, Inc.
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Warnock Hersey



Issued November 29, 2004. Amended additions March 7, 2006

DKS Steel Door & Frame Systems, Inc.



PRODUCT DESCRIPTION

Product Covered:

DKS 1/3 - 3 Hour Steel-Stiffened Steel Fire Doors PP Model 1300

Product Description:

CATEGORY A DOORS-NO ADDITIONAL EDGE-SEALING REQUIRED

Hollow Metal (12, 14, 16, 18, 20 gauge) Vertical Stiffened, Swinging Flush Design Fire Door for installation singly or pairs, including double egress in 1/3 Hour to 3 Hour locations. For use in listed (3-sided) 16 gauge welded steel frames meeting ANSI-A155.1/UL-63 or as per manufacturer’s listings.

Limitations

Mortise or Cylindrical Latches with up to 5” Backset/Surface or Concealed Vertical Rod, including Top Rod Only/Rim Fire Exit Hardware/Viewers/Surface Mounted Closers/Concealed Closer Arms/Surface Bolts/Surface Mounted Protection Plates/Viewer/Louver/Surface Mounted or Mortised Door Bottoms/Vision Light Kit – Maximum 1296 sq.in. for 20/45 minute (or maximum tested by manufacture of glass) maximum tested by manufacture of glass for 60 minute to 3 hour. Astragal for Pairs and Double Egress Pairs is optional. Temperature Rise greater than 650°F @ 30 minutes.

Configuration	Maximum Size*
Single	4’0” wide x 10’0” high
Pairs	8’0” wide x 10’0” high
Double Egress	8’0” wide x 10’0” high

*See manufacturer’s installation instructions for additional information on Smoke and Draft Control, size restrictions and limitations.

These doors are eligible for use in any “Category C – Standard” frame. These doors may also be installed in frames listed in “Category C – Proprietary” in accordance with the frame manufacturer’s individual listing.

All doors listed in Category A are eligible to bear the  (for Smoke & Draft Control assemblies) if a listed “Category H – Smoke & Draft Control Gasket” has been applied to the assembly. Please refer to Category H for individual gasket manufacturer’s listings.

All doors in this category are identified by a label or marking bearing the wording, “Listed Fire Door”, a time interval, a temperature rise rating, a serial number and the Warnock Hersey Certification Mark and “UBC-7-2-97/UL 10C”.

<u>Attribute</u>	<u>Value</u>
Architecture Code	08100 Metal Doors and Frames
Architecture Subcode	08110 Metal Doors
Authorized by Office	Middleton Regional Certification Center
Certification Services	Certification
Client Number	31931
Criteria	UL 10(c) (1998)
Criteria	UBC 7-2 (1997)
Criteria	NFPA 252 (1999)
Criteria	CAN 4-S104 (1985)
Fire Resistance	60 Min PP Category A Door
Fire Resistance	3 Hour PP Category A Door
Fire Resistance	90 Min PP Category A Door
Fire Resistance	45 Min PP Category A Door
Fire Resistance	20 Min w/Hose Positive Pressure
Intertek Evaluation Center	Middleton, WI 53562
Listed or Inspected Program	LISTED WHI Certification
Report Number	3079045

MANUFACTURING INFORMATION

APPLICATION

Category A doors constructed as described in this procedure meet the requirements for both positive and neutral pressure fire tests, UBC 7-2 (1997), UL 10C (1998), NFPA 252 (1999), ASTM E2074 (2000), and CAN S104 (1985) including the hose stream.

Doors labeled for positive pressure applications must include installation instructions to be furnished by the door labeler. Unless otherwise noted in the door's installation instructions all intumescent materials and smoke/draft control gasketing used in the assembly are to be installed per their respective manufacturer's instructions.

These non-temperature rise doors have been fire tested at positive pressure in accordance with UBC 7-2 (1997). Unexposed temperature rise is greater than 6500 in 30 minutes.

SIZE

TYPE	Max Width	Max Height	Max Thickness
Single Swing	4'0"	10'0"	1 ¾"
Standard Pair	8'0" (4'0" Per Leaf)	10'0"	1 ¾"
Double Egress	8'0" (4'0" per Leaf)	10'0"	1 ¾"

FACES

- 20 gauge (0.032"), 18 gauge (0.042") 16 gauge (0.053")
- 14 gauge (0.067") and 12 gauge (0.093")

CORE

- Fiberglass insulation 1.5 lb. cu/ft, 1 5/8" thick, filling cavities, except those necessary for concealed hardware.

STIFFENERS

- 22 gauge vertical hat or half hat shaped stiffeners, full-length of the door, not exceeding 6" O.C. 7½" maximum from either hinge or latch edge. Spot welded 2 ¼" in. from each end and then approximately 4" O.C. full length.
- Stiffeners may be shortened to accommodate closer reinforcement and mortise hardware.

TOP AND BOTTOM CHANNELS

16 gauge (0.053") full depth and width of door spot welded to door faces approximately 4" O.C.

Additional channels may be placed in the top and bottom channels for moisture barrier. May be caulked with silicone.

HINGE REINFORCEMENT

10" long x 1¼" wide x 7 gauge. Spot or tack welded.

LOCK REINFORCEMENTS

Standard

Lock: 2 reinforcements positioned to accommodate lock assembly 2 ½" in length X 1 ⅛" in width X 12 gauge spot or tack welded.

Alternate

Lock: Reinforcement positioned to accommodate lock assembly. 14 gauge extruded to 12 gauge spot or tack welded.

STRIKE REINFORCEMENTS

Standard

2 reinforcements positioned to accommodate strike 2 ½" in length X 1 ⅛" in width X 12 gauge spot or tack welded.

Alternate

Reinforcement positioned to accommodate lock assembly. 14 gauge extruded to 12 gauge stop or tack welded.

CLOSER REINFORCEMENTS

Reinforcement positioned to accommodate closer. Minimum 14 gauge X 4" X 16" minimum.

FLUSH BOLT REINFORCEMENTS

Standard

2 reinforcements positioned to accommodate flush bolt assembly. 2 ½" in length X 1 ⅛" in width X 12 gauge spot or tack welded.

Alternate

Reinforcement positioned to accommodate flush bolt assembly. 14 gauge extruded to 12 gauge spot or tack welded.

HARDWARE

Latches

All latching devices used must be listed for use in positive pressure tested steel faced doors.

Cylindrical locks with a maximum 5" backset.

Mortise latches.

Rim and Concealed or Surface mounted vertical rod fire exit devices.

NOTE:

All doors provided with reinforcements for fire exit hardware must have a second label attached stating "Fire Door to be Equipped with Fire Exit Hardware".

MINIMUM LATCH BOLT THROW

Single Swing Door

42" wide X 86" high or less, minimum ½ bolt throw.

Doors exceeding 42" wide X 86" high, minimum ¾" latch throw.

Pairs

All doors swinging in pairs or double egress pairs, minimum ¾" latch throw.

Note

All door labels must identify the minimum latch bolt throw.

HINGES

Only listed fire rated mortised, surface applied or continuous hinges can be used, similar to Cal-Royal, McKinney, Dorma or Rixon.

BOLTS

Only listed fire rated mortised or surface applied bolts can be used.

CLOSERS

Only listed fire rated surface applied or mortised closers may be used.

OTHER HARDWARE

Any other listed fire rated hardware that has been tested and approved for hollow metal doors may be mounted into these doors.

ASTRAGALS

An astragal is not required on pairs of doors or double egress pairs up to and including 3 hour fire doors. Astragals can be applied or integral.

VISION LIGHT KIT

Factory installed Glass Molding.

Any listed fire rated vision light kits that are positive pressure tested and labeled such as Anemostat or Air Louvers may be used.

MAXIMUM CLEAR VIEW GLASS SIZE

20 minute and 45 minute ratings – 54" x 54" not exceeding 1296 square inches or maximum tested by glass manufacturer.

1 ½ hour – 100 square inches maximum

Minimum stiles and top rail is 6" and minimum bottom rail is 10" at 20 minutes, 45 minutes, 1 and 1 ½ hour rating.

The light cut-out shall be reinforced around the perimeter with minimum 18 gauge steel channels.

Multiple openings are allowed when the sum of the areas do not exceed the tested area.

LOUVERS

Only listed fire rated louvers with fusible links shall be used. Maximum size allowed is 24" x 24" in lower ½ of door.

The louver cut-out shall be reinforced around the perimeter with minimum 18 gauge steel channels.

VIEWERS

Listed viewers with maximum bore diameter of 1" or less allowed.

AUTOMATIC DOOR BOTTOMS

Listed surface or mortise automatic door bottoms allowed.

PROTECTIVE PLATES

Maximum 16 ga. steel armored plates may be added to the door. The maximum size is 36" wide and 46" high.

INSTALLATION INSTRUCTIONS

Installation instructions shall be packaged with each door shipped or may be included in the submittal process.

CERTIFICATION LABEL

Fire-rated Door, the Warnock Hersey ® certification label may be applied within the top 1/3 of hinge edge. The certification label shall be applied with rivet screw-type or mylar label.

Exception: When a continuous type hinge is applied to the door, the WH certification label shall be attached to the top of the Door.

REQUIRED ITEMS:

- Warnock Hersey Certification Mark ® with Country Identifiers
- The word "LISTED"
- The product category "FIRE-RATED DOOR"
- Fire Protection Rating
- Temperature Rise exceed 650 in 30 minutes
- Serial Number
- Control Number or Listee's Name
- The words "DO NOT REMOVE OR COVER THIS LABEL"
- The words "SEE INSTALLATION INSTRUCTIONS"

OTHER ITEMS:

- **POSITIVE PRESSURE statement:**
If the door is to be labeled for positive pressure, the following is required.
Required: The words "MEETS UBC 7-2-97 / UL 10C" or "MEETS UBC7-2-97" or "MEETS UL 10C"
Identify: "CAT. A" or "CAT. B"
Optional: "POSITIVE PRESSURE"
- **SMOKE AND DRAFT CONTROL statement:**
Required: The label shall provide the required positive pressure statements (see positive pressure requirements above).
The S mark: The words "SMOKE AND DRAFT CONTROL RATING REQUIRE A LISTED GASKET."
Optional: The words "SMOKE LEAKAGE < 3 cfm/ft² per UL 1784"



PRODUCT DESCRIPTION

Product Covered:

DKS Series 1000, 1100,1200, 1600, 1700, 1800, 1900 3-Hour Polystyrene Core Steel Fire Door

Product Description:

FIRE DOORS – POSITIVE PRESSURE CATEGORY A NO ADDITIONAL EDGE-SEALING SYSTEM REQUIRED

PRODUCT COVERED

Series 1000, 1100,1200,1600, 1700, 1800, 1900 Fire Door

PRODUCT DESCRIPTION

Foam Filled Steel Fire Doors for installation Singly or in Pairs in 3 hour positive pressure assemblies, with temperature rise greater than 650°F at 30 minutes.

Limitations

Maximum Sizes

Single Swing

45 mm (1.75 inches) Minimum Thickness
1208 mm (48 inches) Maximum Width
2416 mm (96 inches) Maximum Height

Pairs

45 mm (1.75 inches) Minimum Thickness
2416 mm (96 inches) (each leaf:1208 mm (48 inches)) Maximum Width
2416 mm (96 inches) Maximum Height

Vision Panels maximum 1296 sq. inches for 20 and 45 minute locations; 100 sq inches for 60 and 90 Minute locations. Glazing kit for light kits requires use of minimum 18 ga. Steel channel reinforcement attached to both faces around the vision panel cutout.

Evaluated to the following...

This category includes doors evaluated without an edge-sealing system between the door and the frame. It also includes doors evaluated with a sealing system incorporated (concealed or visible) into the edge of the door by the licensed manufacturer or machining distributor.

Meeting edges of pairs may require an astragal or an edge-sealing system. Please refer to individual door listings.

These doors are eligible for use in any “Category C – Standard” frame. These doors may also be installed in frames listed in “Category C – Proprietary” in accordance with the frame manufacturer’s individual listing.

All doors listed in Category A are eligible to bear the **(S)** (for Smoke & Draft Control assemblies) if a listed “Category H – Smoke & Draft Control Gasket” has been applied to the assembly. Please refer to Category H for individual gasket manufacturer’s listings.

All doors in this category are identified by a label or marking bearing the wording, “Listed Fire Door”, a time interval, a temperature rise rating, a serial number and the Warnock Hersey Certification Mark and “UBC-7-2-97/UL 10C”.

Attribute	Value
Architecture Code	08100 Metal Doors and Frames
Fire Resistance	3 Hour Neutral Pressure
Fire Resistance	3 Hour PP Category A Door
Swing	Single Swing
Swing	Standard Pairs
Listed or Inspected	LISTED
Report Number	3053378 & 3071125
Criteria	ASTM E152-81a
Criteria	UL 10(c) (1998)
Criteria	UBC 7-2 (1997)
Criteria	UBC 7-2 (1994)
Criteria	UL 10(b) (1997)
Criteria	ASTM E2074 (2000)
Criteria	NFPA 252 (2003)
Criteria	CAN / ULC S104 1980 R1985
Temperature Rise	@ 30 Min > 650°F
Intertek Services	Certification

MANUFACTURING INFORMATION

APPLICATION

Doors constructed as described in this procedure meet the requirements for both positive and neutral pressure fire tests, UL 10(c) (1988), UL 10(b) (1997), UBC 7-2 (1997) Part 1, UBC 7-2 (1994), NFPA 252 (2003), ASTM E2074 (2000), ASTM E152-81a, and CAN/ULC-S104 1980 R1985.

These doors are Category “A” doors (no additional edge sealing system is required).

Doors labeled for positive pressure applications must include installation instructions to be furnished by the door labeler. Unless otherwise noted in the door’s installation instructions all intumescent materials and smoke/draft control gasketing used in the assembly are to be installed per their respective manufacturer’s instructions.

SIZE LIMITATIONS

Single Swing	48” wide by 96” high
Pair	96” wide by 96” high
Minimum Thickness	1 3/4” ± 1/16”

COMPONENTS

CORE(S)

Polystyrene foam core with a density of 13.3 kg/m³ (0.83 pounds per cubic foot) (See diagrams)

Material: 1.0 pcf nominal density of EPS foam slab

Polystyrene Foam Core	Working Temp. (Flammability) = -20°C to 60°C
	Soundproof = 35 db
	Density = 17.7 kgs/m ³
	Compressive Strength = 67.8 kpa min
	Tensile Strength = 122.7 kpa min
	Voids (visual) = none
	Fusion = Styrene Bead Structure

Honeycomb Core	Thickness = 43mm ± 0.5mm
	Cell Diameter = 18mm
	Weight = 180 g/m ²
	Compressive Strength = 4.5 kgs/cm ²
	Proportion = 28 kgs/m ³
	Moisture Content = £10%

ISO Foam Core	Isocyanate
	Solid Content = >75%
	PH value = 4-7
	Viscosity = 1000-10,000 MPAS
	Gumming Quantity = 200-400 g/m ³
	Working Temperature = -30°C to 200°C
	Adhesive Strength = 3 MPA

SKINS

- Faces form door edges (stiles)
- Face edge bent with a leg of 22.5mm + 0mm / -0.5mm (0.886 in. + 0 in. / -0.020 in.) with a 14mm (0.55 in.) return

Material: Mild steel, or galvanized mild steel

Gauge: 1200 Series – 20 gauge
 1600 Series – 16 gauge
 1800 Series – 18 gauge

Seams:

- Option 1: Tack Welded – 22mm (1 in.) on center, seam in center of door edge
- Option 2: Lap Seam Construction – Seam at edge of door, tack welded 100mm (4 in.) on center
- Option 3: Lock Seam Construction – Tack welded lock seam on each side at 100mm (4 in.) on center

END CHANNEL (FOAM CORE)

- Top: 16 gauge, inverted, spot welded to skins, no holes
- Bottom: 16 gauge with 0.71 in. vent holes every 6 inches along length

END CHANNEL (HONEYCOMB CORE)

- 1.5 mm (16 gauge – 0.060 in.) thick galvanized steel
- C-Shaped with 20 mm (0.785 in.) legs by 42 mm (1.654 in.) web by full width of door
- Spot welded to faces 13 mm (0.50 in.) from ends and 50 mm (2.00 in.) on center

LIGHT CLOSURE CHANNEL

- Refer to Drawing

HINGE REINFORCEMENTS

- 4 mm (8 gauge – 0.164 in.) thick galvanized steel by 205 mm (8.00 in.) long by 32 mm (1.25 in.) wide
- Attached to face edges with a two spot-welds on each end (one on each tab)

CLOSER REINFORCEMENTS

- 3 mm (12 gauge – 0.108 in.) thick by 200 mm (8 in.) wide by 380 mm (15 in.) long galvanized steel
- Two (2) plates – with one plate spot welded to each face

LATCH REINFORCEMENTS

- 2 mm (14 gauge – 0.075 in.) galvanized steel spot welded to faces
- Reinforcements located per hardware requirements

ASTRAGAL

- 20 gauge (1mm) door edge with 19mm (3/4 in.) astragal projection

ADHESIVES

- 3M Fastbond 30-NE/30H-NF
- 3M Fastbond 49
- 3M Scotch-Grip High Performance Contact
- Adhesive 1357; 1357 Neutral, 1357-L

PRIMER PAINT (required for non-galvanized skins)

Viscosity = > 100 MPAS
Fineness = £ 20mm
Solid Content = ³ 40%
Air Dry Time: Surface Dry = £ 10 Minutes
Air Dry Time: Core Dry = £ 50 Minutes
Impact Strength = 50 kgs/cm
Water Soluble

CONSTRUCTION DETAILS

1. Faces are cut to length and width
2. Edges are formed on both faces of door
3. Reinforcements for hinges, latches, and closers are welded to faces
4. Foam Core adhered to faces with isocyanate adhesive (formula shown in drawing 1)
5. Top face is slid into place on bottom face
6. Ends welded to faces
7. Faces welded together with welds 50 mm (2.00 inches) on center
8. All welds ground and finished smooth
9. Door painted
10. Label applied