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May 6, 2008

IMS/AMCO Engineered Products
3801 N. Rose Street
Schiller Park, IL 60176-2190

Attention: Mr. Jim Walenda

Regarding: Dynamic and Static Loading of Cabinet Frames
Gaynes Job No. 08254 AMCO Purchase Order: PO4426

Dear Mr. Walenda:

This report describes the procedures and results of the Static and Dynamic Load Testing of 2 AMCO Cabinet Frames identified as Titan FRAME (the frames appeared to be identical). The overall outside dimensions of each frame are 29" x 45" x 88 5/8" high (90 1/8" high including the casters). Testing was conducted at Gaynes Labs, Inc. on April 29, 2008 and was partially witnessed by yourself, and Victor Beristany.

TEST OBJECTIVE:

To subject the frames to dynamic and static physical loading and establish a loading value to the frames.

TEST PROCEDURES:

Testing was based on a previously agreed upon test plan and your verbal instructions during testing.

Each frame was equipped with 12 identical shelves. Eleven shelves were equally spaced (7" on center vertically) starting at the bottom of the frame. The top shelf was spaced 5 1/4" o.c. to the second shelf down. The shelves were mechanically fastened to four vertical steel corner angles, which were in turn, mechanically fastened to the frame. Each shelf was said to weigh 37 pounds for a total of 444 lbs.

Dynamic Load Testing:

1) Rolling Across a Floor Hazard: Each of the 12 shelves were evenly loaded with 335 pounds for a total of 4020 lbs. The weight of the 12 shelves was 444 lbs., therefore a total of 4464 lbs was acting on the frame as shown in photo 1. The loaded frame was setting on a smooth, flat, concrete floor with the rear of the frame facing the runway. The loaded frame was pushed by a fork lift rearward for a distance of 25 feet in a straight line across the concrete floor. At 12 1/2 feet, the frame encountered a metal hazard that was attached to the floor (photo 2). Dimensions of the hazard are 36" wide x 2" deep x 1/8" high with a 1/8" radius across the leading and trailing edges. The hazard was perpendicular to the direction of travel so that both rear wheels made contact with the hazard at the same time followed by the front wheels. At the end of the 25' run way, the direction of the frame was reversed so that the front casters made contact with the hazard first, followed by the rear casters. The frame was inspected and dimensional and angular measurements of various areas were taken before and after testing.

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TEST PROCEDURES (continued):

2 Rolling up an incline: Following the Floor Hazard Test the same frame with 4464 lbs. was subjected to the Incline Test. The frame, starting on a smooth flat horizontal floor, was pushed by a fork lift up a smooth, flat, 5° angle incline until all four casters were on the incline (photo 3). The frame was pushed so that both front casters made contact with the incline, followed by both rear casters. The frame was brought back to the horizontal surface and rotated 180°. An additional 70 lbs per shelf was added bringing the total load on the frame to 5304 lbs. (photo 4). The procedure was repeated with the rear wheels making contact first with the incline. The frame was inspected and dimensional and angular measurements were recorded.

Static Load Testing: A second untested frame identical to the first, was subjected to the Static Load Test. The frame was placed on a smooth, flat, concrete floor. Each of the twelve shelves was evenly loaded with 670 pounds of weights (8040 total). The weight of the shelves was 444 lbs. for a total load acting on the frame of 8484 lbs. (photo 5). The fully loaded frame was allowed to set at least 2 hours while visual inspections and photos were taken. Dimensional measurements and angles of various areas of the frame were recorded as empty, fully loaded, and again empty.

TEST RESULTS of DYNAMIC LOAD TESTING:

Key to Tables - The letters shown in parenthesis indicate the location of the dimensional measurements:

(A) Measured horizontally at inside of front vertical frame (short dimension). Measurement taken 44" down from top of frame (photo 6).
(A') Measured horizontally at inside of mid span of horizontal frame, short dimension. Measurement taken 44" down from top of frame (photo 7).
(B) Measured horizontally at inside of rear vertical frame (short dimension). Measurement taken 44" down from top of frame.
(C) Measured horizontally at inside of left vertical frame (long dimension). Measurement taken 44" down from top of frame.
(D) Measured horizontally at inside of right vertical frame (long dimension). Measurement taken 44" down from top of frame (photo 8).
(E) Measured horizontally at inside of front vertical frame (short dimension). Measurement taken adjacent to bottom horizontal frame (photo 9).
(F) Measured horizontally at inside of mid span of horizontal frame, short dimension. Measurement taken adjacent to bottom horizontal frame.
(G) Measured horizontally at inside of rear vertical frame (short dimension). Measurement taken adjacent to bottom horizontal frame.
(H) Measured horizontally at inside of right vertical frame (long dimension). Measurement taken adjacent to bottom horizontal frame.
(I) Measured horizontally at inside of left vertical frame (long dimension). Measurement taken adjacent to bottom horizontal frame.

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TEST RESULTS of DYNAMIC LOAD TESTING (continued):

The dimensions were measured to the nearest 1/16". The tables indicate the change in dimensions in relation to the initial measurements.

Initial Measurements

(A)	(A')	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
24 10/16	27 2/16	24 6/16	40	40	24 12/16	28 12/16	24 12/16	39 14/16	39 14/16

Table 1 Loaded to 4464 Lbs.

(A)	(A')	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
0	0	0	0	0	0	0	0	0	0

Table 2 After Rolling Over Floor Hazard with 4464 Lb. Load

(A)	(A')	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
0	0	0	0	0	0	0	0	0	0

Table 3 After 1st Roll Up 5° Incline with 4464 Lb. Load

(A)	(A')	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
0	0	0	0	0	0	0	0	0	0

Table 4 After 2nd Roll Up 5° Incline with 5304 Lb. Load

(A)	(A')	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
0	0	0	0	0	0	0	0	0	0

Angular Measurements to the nearest 0.1 degree.

A digital level was placed on the vertical frame post at the mid span (photo 10). The locations were assigned, as if you are looking at the front of the frame (narrow dimension).

#1=Left Front Vertical Frame
#2=Right Front Vertical Frame
#3=Left Rear Vertical Frame
#4=Right Rear Vertical Frame

The following locations refer to the angular measurements in the front to back orientation.

Location	No Load	4464# Load	After Hazard	1st Incline 4464#	2nd Incline 5304#
#1	89.7°	89.7°	89.4°	90.0°	89.9°
#2	89.7°	89.7°	89.5°	89.9°	90.0°
#3	89.9°	89.9°	89.7°	89.7°	89.7°
#4	89.9°	89.9°	89.7°	89.8°	89.7°

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TEST RESULTS of DYNAMIC LOAD TESTING (continued):

The following locations refer to the angular measurements in the side to side orientation.

Location	No Load	4464# Load	After Hazard	1st Incline 4464#	2nd Incline 5304#
#1	89.2°	89.0°	88.8°	90.0°	89.8°
#2	89.4°	89.2°	89.0°	89.9°	89.7°
#3	89.2°	89.0°	88.8°	90.0°	89.8°
#4	89.4°	89.3°	89.1°	89.8°	89.6°

Visual Inspections

After being Loaded to 4464 Lbs.: Frame appears to be unchanged.
After Rolling Over Floor Hazard with 4464 Lb. Load: Frame appears to be unchanged.
After 1st Roll Up 5° Incline with 4464 Lb. Load: Frame appears to be unchanged.
After 2nd Roll Up 5° Incline with 5304 Lb. Load: Frame appears to be unchanged (photo 11).

CONCLUSION to DYNAMIC LOAD TESTING:

This conclusion is in response to your question regarding the potential rated capacity of the frame. The aforementioned testing was conducted based on a mutually agreed upon test plan and not an ANSI test method. Therefore ANSI MH28.1-1997 American National Standard For the Design, Testing, Utilization and Application of Industrial Grade Steel Shelving-Specifications was used as a guide for determining a load rating. The formula given in Section 6 - Shelf Capacities 6.2.3 (a) states: Two-thirds (factor of safety of 1.5) of the ultimate average failure load carried by the shelf. Please note that the conducted dynamic load testing of the cabinet frame did not subject the shelves or frame to the point of failure. The maximum applied load with the frame on a 5° incline was 5304 lbs. therefore, based on the aforementioned formula (2/3 x 5304), a potential rated capacity of 3536 lbs. could be conservatively implied to the cabinet frame.

TEST RESULTS of STATIC LOAD TESTING

Refer to the aforementioned Key to Tables for the location of measurements. Tables 6 and 7 indicate a change in dimensions from the initial measurement.

Table 5 Initial Measurements

(A)	(A')	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
24 7/16	27 3/16	24 8/16	40	39 15/16	24 12/16	28 12/16	24 12/16	39 14/16	39 14/16

Table 6 8484 Lb. Load

(A)	(A')	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
0	+1/16	0	0	0	0	0	0	+1/16	+1/16

Table 7 Empty - Post Load

(A)	(A')	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
0	0	0	0	0	0	0	0	+1/16	0

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TEST RESULTS of STATIC LOAD TESTING (continued):

Angular Measurements to the nearest 0.1 degree.

A digital level was placed at the mid span on the vertical frame post at the mid span. The locations were assigned as one views the front of the frame (narrow dimension).
#1=Left Front Vertical Frame
#2=Right Front Vertical Frame
#3=Left Rear Vertical Frame
#4=Right Rear Vertical Frame

The following locations refer to the angular measurements in the front to back orientation.

Location	Empty Pre Load	8484# Load	Empty Post Load
#1	89.8°	89.8°	89.8°
#2	89.6°	89.6°	89.7°
#3	89.9°	89.8°	89.9°
#4	89.8°	90.0°	89.8°

The following locations refer to the angular measurements in the side to side orientation.

Location	Empty Pre Load	8484# Load	Empty Post Load
#1	89.5°	89.0°	89.2°
#2	89.4°	88.9°	89.0°
#3	89.6°	89.1°	89.2°
#4	89.4°	89.0°	89.1°

Visual Inspections: After being Loaded to 8484 Lbs.: Frame appears to be unchanged (photo 12).

CONCLUSION to STATIC LOAD TESTING:

This conclusion is in response to your question regarding the potential rated capacity of the frame. The aforementioned testing was conducted based on a mutually agreed upon test plan and not an ANSI test method. Therefore ANSI MH28.1-1997 American National Standard For the Design, Testing, Utilization and Application of Industrial Grade Steel Shelving-Specifications was used as a guide for determining a load rating. The formula given in Section 6 - Shelf Capacities 6.2.3 (a) states: Two-thirds (factor of safety of 1.5) of the ultimate average failure load carried by the shelf. Please note that the conducted static load testing of the cabinet frame did not subject the shelves or frame to the point of failure. The maximum applied load to the frame was 8484 lbs. therefore, based on the aforementioned formula (2/3 x 5304), a potential rated capacity of 5656 lbs. could be conservatively implied to the cabinet frame.

Please contact me if you need additional information regarding this test program.

Sincerely,

Leonard Roesner

Leonard Roesner

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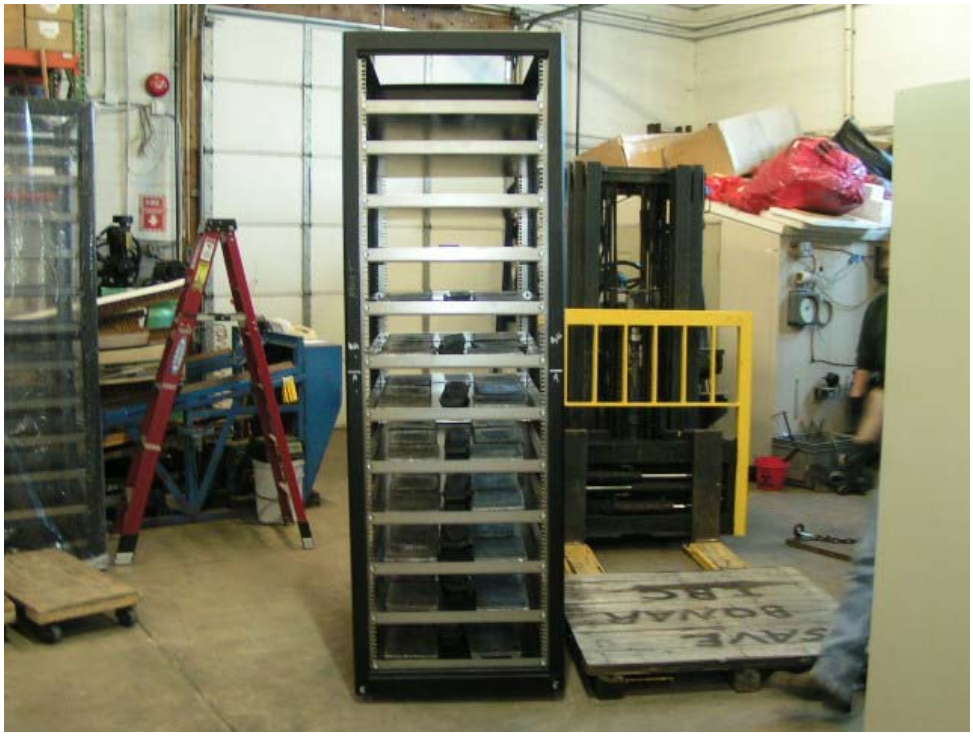

Photo 1: 4464 lb. Load on Frame for Dynamic Testing

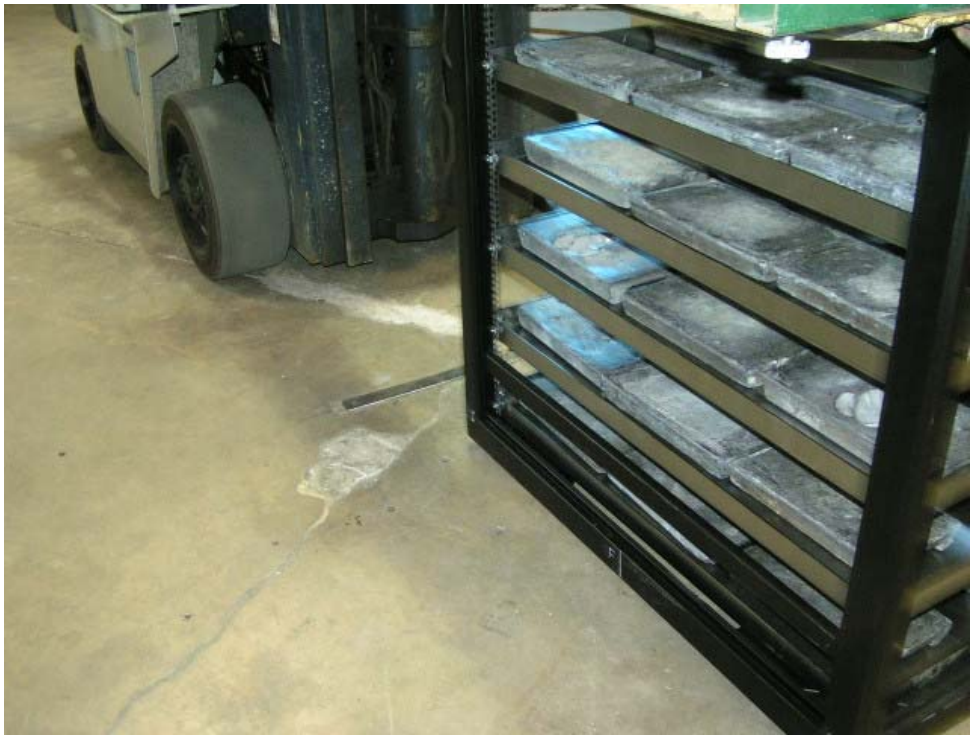

Photo 2: Steel Floor Hazard

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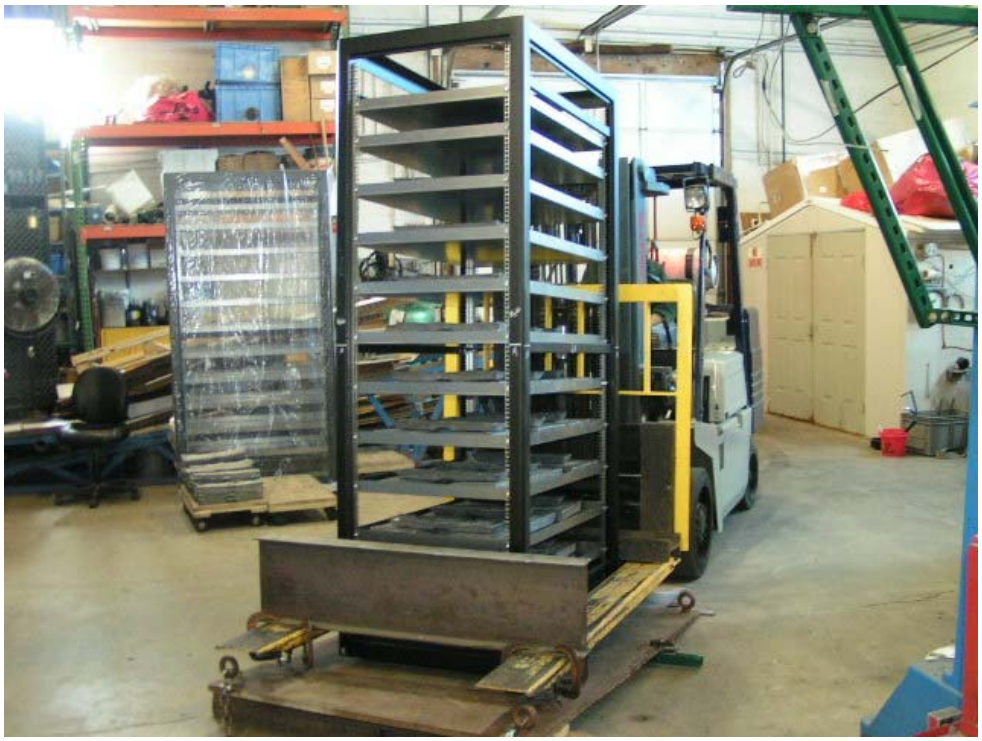

Photo 3: Frame Loaded with 4464 Lbs. on 5° Incline

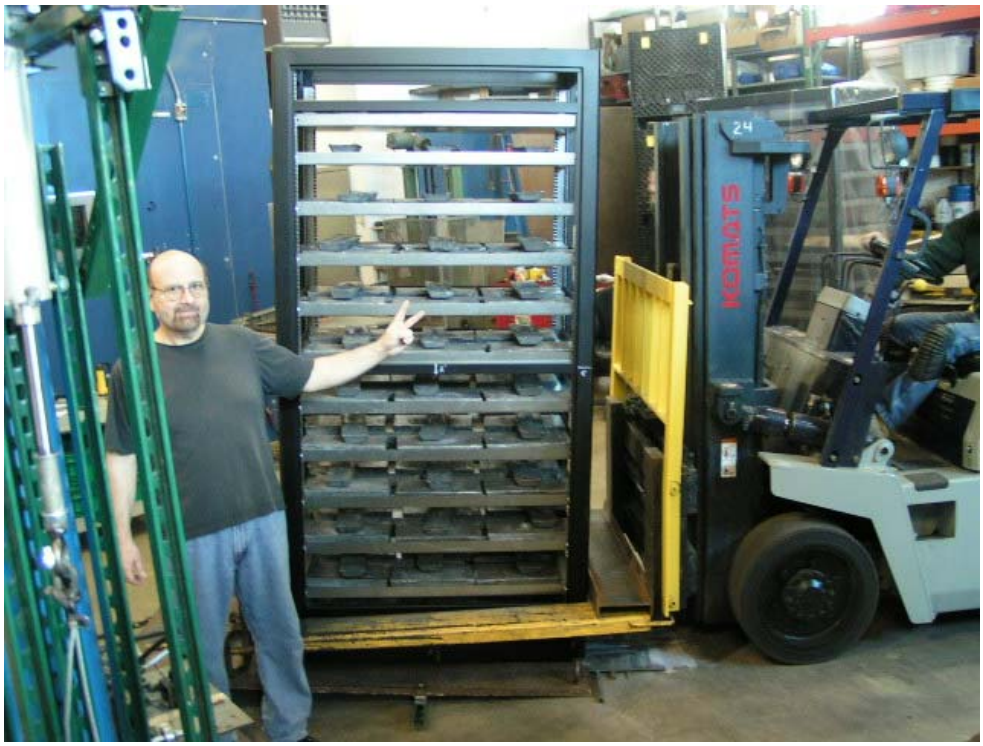

Photo 4: Frame Loaded with 5304 Lbs. on 5° Incline, 2nd Test

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Photo 5: Static Loading with 8484 Lbs. Total Load

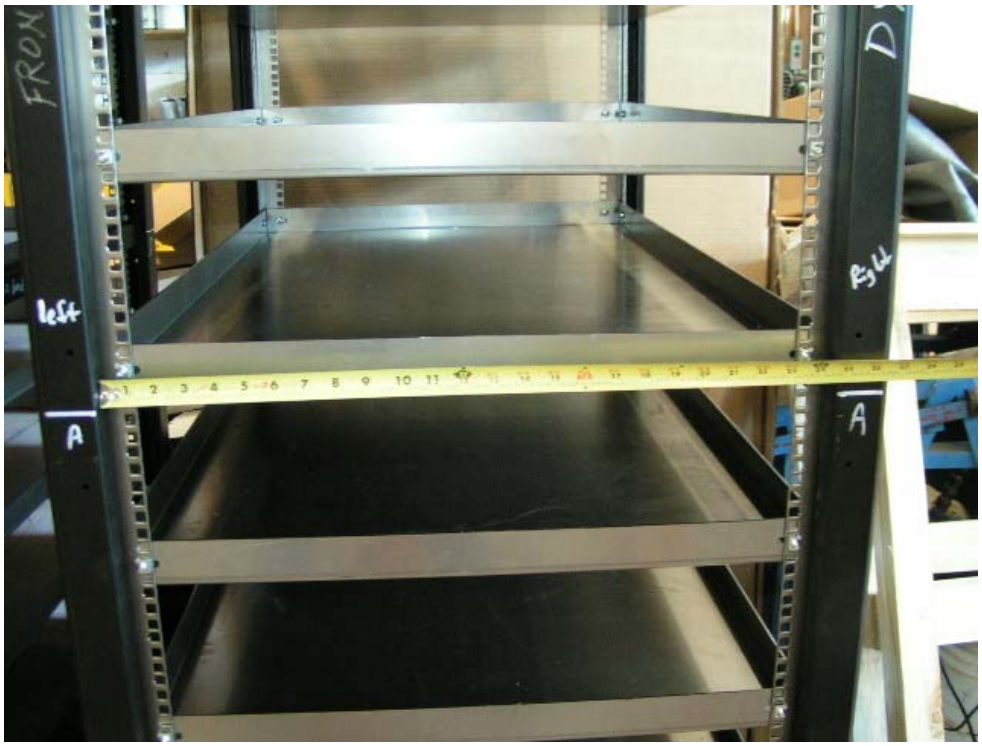

Photo 6: Measuring Technique

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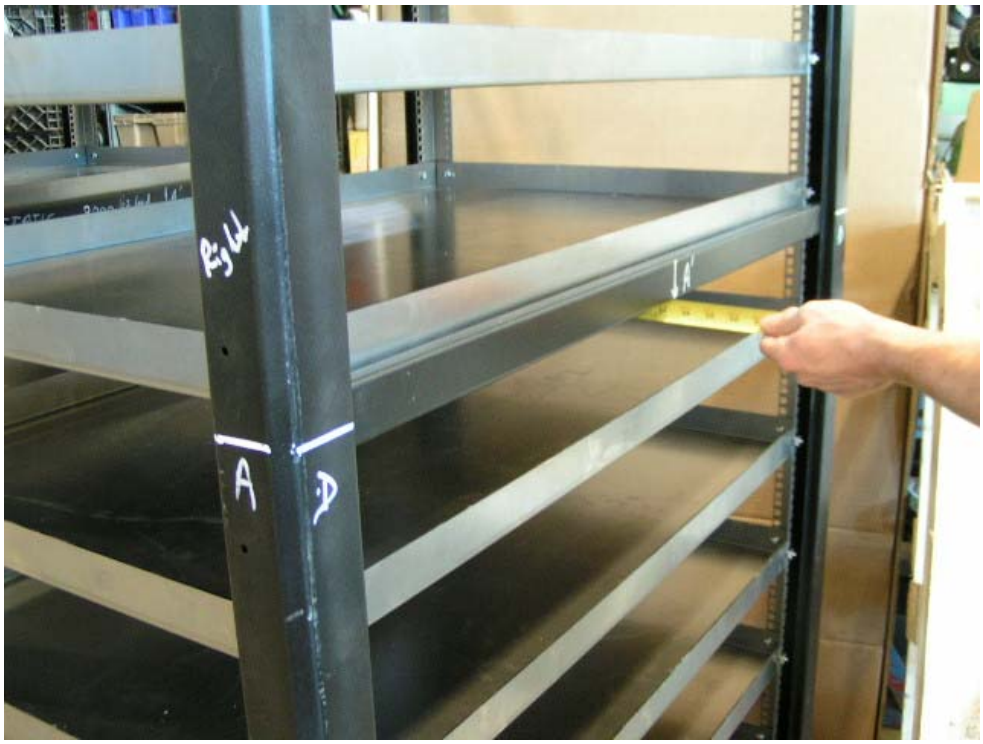

Photo 7: Measuring Technique at Horizontal Framing

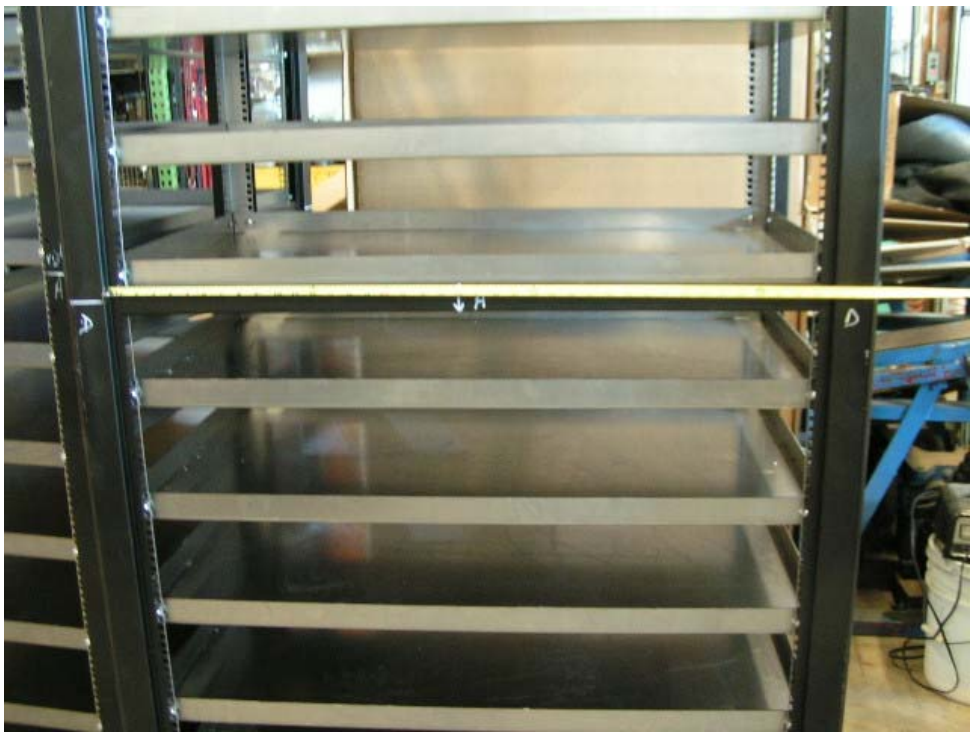

Photo 8: Measuring Technique in Long Dimension

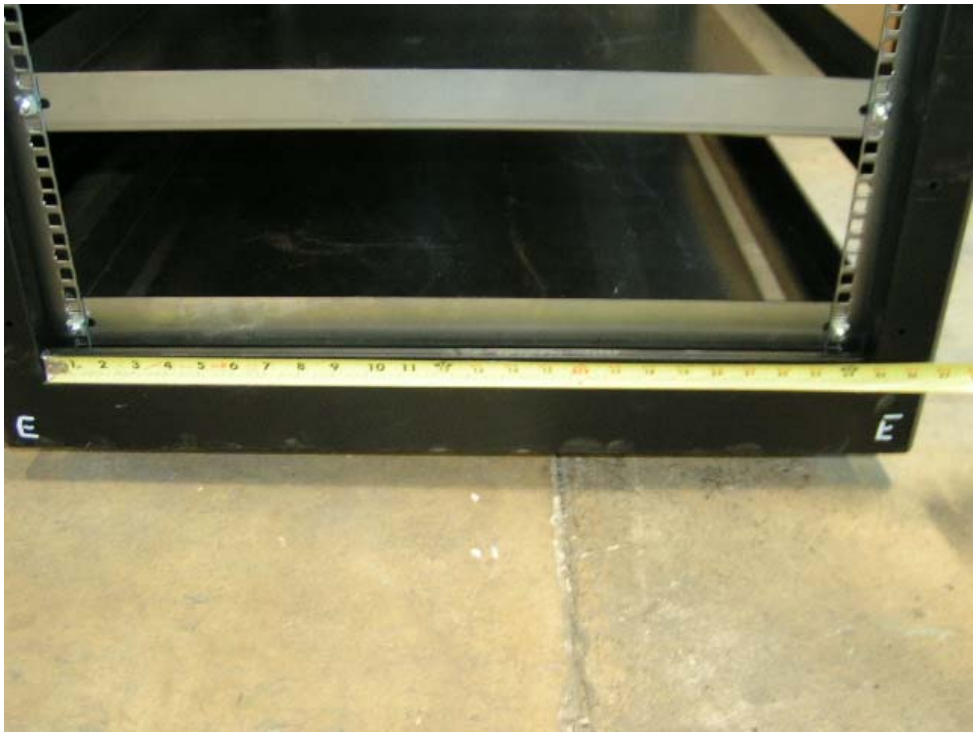

Photo 9: Measurement Location at Lower Frame - Short Side

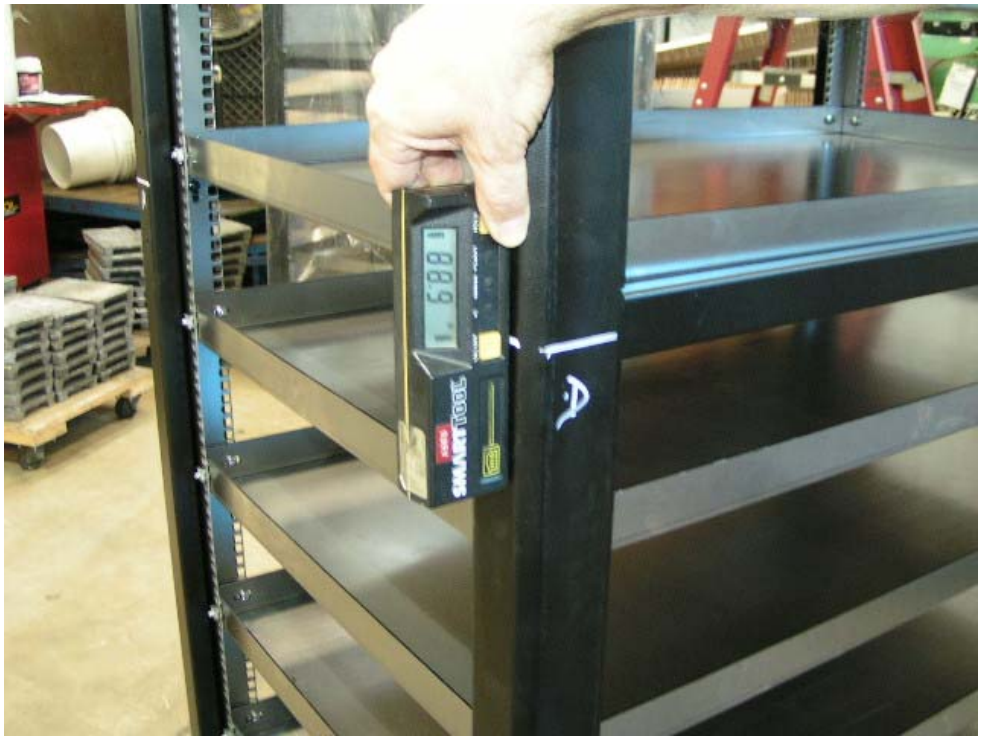

Photo 10: Angular Measuring Technique.

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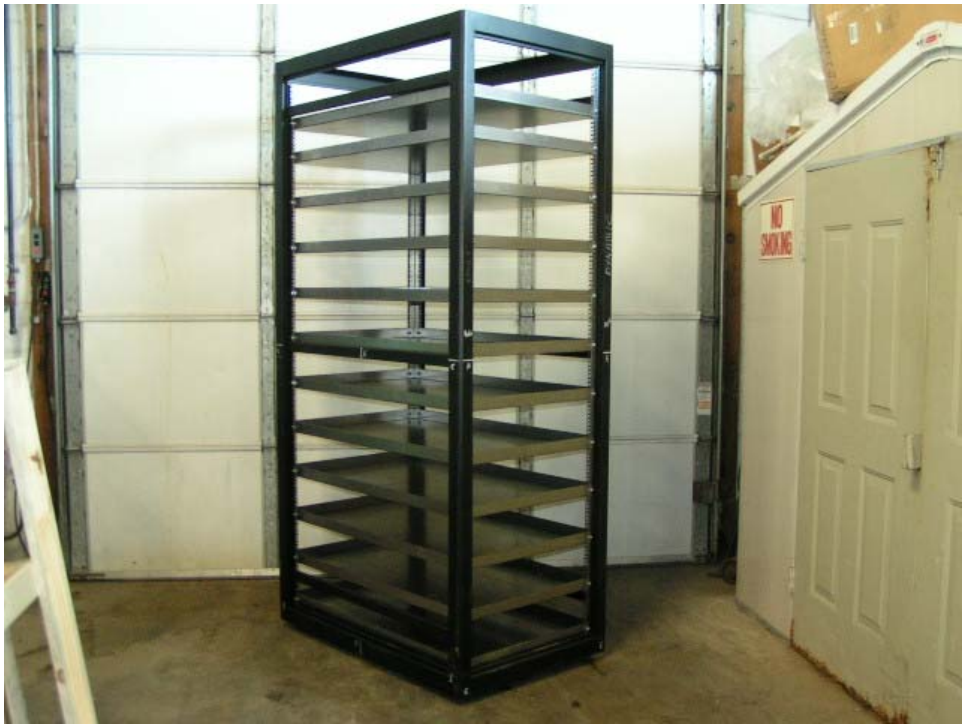

Photo 11: Condition of Frame after Dynamic Loading to 4464 and 5304 Lbs.

Photo 12: Condition of Frame after Static Loading to 8484 Lbs.

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(b) Differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested;

(c) Any use of the tested item, whether by IMS/AMCO Engineered Products.or a third party, following its return to IMS/AMCO Engineered Products from Gaynes Labs, Incorporated.

Gaynes Labs, Inc.

Leonard Roesner