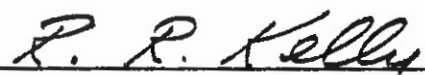


TO:  <b>Director,          Preliminary Plan Review Bureau</b> <b>SUPERSEDED BY EI 85-040</b> <b>EFFECTIVE 1/9/1986</b>	<b>ENGINEERING INSTRUCTION</b> NEW YORK STATE DEPARTMENT OF TRANSPORTATION
Distribution: <input checked="" type="checkbox"/> Main Office <input checked="" type="checkbox"/> Regions <input type="checkbox"/> Special	Code: <u>EI 77-15</u> Date: <u>3/10/77</u>
APPROVED:  <u>R. R. Kelly, Asst. Dep. Ch. Engr., Construction Subdiv.</u>	Supersedes: EI 76-7

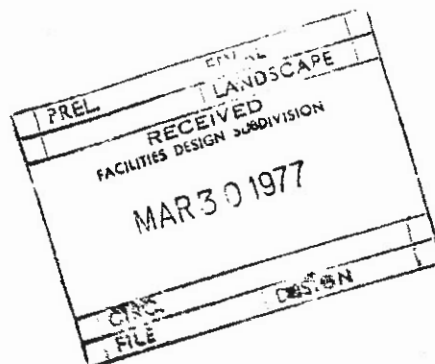
The Facilities Design Subdivision has issued (1-3-77) a uniform set of item specifications for Inertial Barrier Modules as manufactured by Energy Absorption Systems, Inc. of Chicago, Illinois, and FIBCO, Inc. of Boston, Massachusetts, or approved equal.

The previously issued Engineering Instruction 76-7, Energite Inertial Modules, is hereby rescinded. All material details and fabrication specifications will now be in accordance with the following item specifications attached herewith:

- 15654.0102 - Inertial Barrier Module, Type A - 400#
- 15654.0202 - Inertial Barrier Module, Type B - 700#
- 15654.0302 - Inertial Barrier Module, Type C - 1400#
- 15654.0402 - Inertial Barrier Module, Type D - 2100#

There is no need to make item changes on existing contract items as these new specifications are an update of the manufacturer's product and construction details. The Facilities Design Subdivision will provide each Regional Office with copies of the latest manufacturer's drawings.

Attachment



15654.0102	INERTIAL BARRIER MODULE (TYPE A, 400 POUNDS)	(Continued)
15654.0202	INERTIAL BARRIER MODULE (TYPE B, 700 POUNDS)	
15654.0302	INERTIAL BARRIER MODULE (TYPE C, 1400 POUNDS)	
15654.0402	INERTIAL BARRIER MODULE (TYPE D, 2100 POUNDS)	

When called for in the plans, reflectorized aluminum clearance marker panels shall be suitably attached to the front face of the nose module of the completed installation. Reflectorized Panels shall be provided under their respective item.

The design of the module shall be such as to place the center of gravity of the sand mass as measured from the bottom of each module as follows:

<u>Module Weight</u>	<u>C.G. (in.) ± 1 inch</u>
400	24
700	23
1400	23
2100	19

Components designed to fit together shall do so without the use of force or special tools and shall not fall apart when placed in service.

The cover lid shall be "pop" riveted in place with a minimum of six equally spaced rivets or an equally restraining design.

The Contractor shall paint a pattern on the site to indicate the location and weight of each module as recommended by the manufacturer and approved by the Engineer.

If the plans indicate that the site necessitates securing of the module the work shall be performed as recommended by the manufacturer and approved by the Engineer.

Traffic protection devices which may include: cones, signs, barricades, etc., as ordered by the Engineer, shall be provided under their respective items. These devices shall not be removed until the Inertial Barrier Module Installation is fully operational.

If the plans indicate the need for an overall covering for debris and/or esthetics, a device shall be provided and installed as recommended by the manufacturer and approved by the Engineer.

Method of Measurement. Inertial Barrier modules shall be measured by the actual number of each type properly installed.

Basis of Payment. The unit price of each type of inertial barrier module shall include the cost of furnishing all labor, materials, and equipment necessary to complete the module installation. Payment shall be made only after approval by the Engineer of the completed inertial barrier installation, which is comprised of a specified number of Inertial Barrier Modules as shown on the contract plans.

Necessary site preparation, traffic protection devices and reflectorized clearance marker panels shall be paid under their respective items.

15654.0102	INERTIAL BARRIER MODULE (TYPE A, 400 POUNDS)
15654.0202	INERTIAL BARRIER MODULE (TYPE B, 700 POUNDS)
15654.0302	INERTIAL BARRIER MODULE (TYPE C, 1400 POUNDS)
15654.0402	INERTIAL BARRIER MODULE (TYPE D, 2100 POUNDS)

Description. The Contractor shall furnish and install Inertial Barrier Modules at locations and in configurations shown on the plans.

Materials. The module shall be as manufactured by FIBCO, Inc. of Boston, Massachusetts, Energy Absorption System, Inc. of Chicago, Illinois or approved equal.

The color of the outer shell of the modules shall be either federal yellow or neutral gray as noted on the plans. The neutral gray shall be a reasonable visual match to a Munsell Book value of 6.0.

All module components shall be free of defects such as, but not limited to, blow holes, rough or uneven edges, irregular shape and evidence of repairs.

All major components such as the outer barrel, inner liner if used, and lid shall meet a thickness tolerance of  $-0.031$  and  $+0.100$  inches. All dimensions other than angle point radii shall be nominal  $+ 0.0625$  inches. All angle point radii shall be nominal  $+ 0.030$  inches. All incidental components  $1/2$  inch or more in thickness shall be nominal  $+ 0.0625$  inches and those under  $1/2$  inch thickness shall meet a thickness tolerance of  $0.000$  to  $+ 0.031$  inches. All dimensions shall be as shown on the manufacturers' drawings and or specifications as filed with the Deputy Chief Engineer (Facilities Design).

The filler sand shall meet the requirement of Subsection 703-06, Cushion Sand or Subsection 703-07, Concrete Sand of the Standard Specifications. The unit weight of the sand as supplied shall result in the desired module sand weight, plus or minus 10 percent.

The sodium chloride if used shall meet the requirements of Subsection 712-03 of the Standard Specifications.

The paint for the on site layout pattern shall meet the requirements of Subsection 727-03, White Pavement Marking Paints (Type I), of the Standard Specifications, except that glass beads shall not be required.

"Pop" rivets shall be  $3/16$  inch diameter large flange used with  $1/2$  inch washers. Rivets are to be installed in all predrilled holes and as required elsewhere. Grip range shall be  $5/8$  to  $3/4$  inch.

The manufacturer shall file a certificate of compliance with all material and dimension requirements exclusive of sand fill.

Construction Details. The modules shall be installed in accordance with the manufacturer's specifications to form a barrier as shown on the plans and to the satisfaction and approval of the Engineer.

When the design of the sand containing portion of the module is such as to permit free moisture to readily drain out, as determined by the Deputy Chief Engineer (Facilities Design), no antifreeze agent will be used. When the design is such that moisture can be retained, then sodium chloride equal to 5 percent of the design weight shall be thoroughly mixed into the sand.