

PW



public works

Department:
Public Works
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF PUBLIC WORKS

SECURITY

STANDARD TECHNICAL SPECIFICATION FOR A

SECURITY SPIKE BOOM BARRIER SYSTEM

MAY 2005 REV.2

SECURITY ROAD SPIKE BARRIER & BOOM COMBINATION.

Technical Specification

The barriers shall be installed to control ingoing and outgoing traffic manually or with any other proven electronic access control system. It must be possible to integrate the electronic access control system of the spike boom barrier with a management system to allow event logging and enable remote monitoring and control.

1. Spike road barrier

The spike barrier shall also serve as a speed hump to slow down speeding vehicles when the spikes are recessed.

The height of the barrier above ground level shall be 50mm to 70mm. The length of the exposed spikes shall be between 80mm and 100mm with a minimum thickness of 10mm. The distance between the spikes shall be 90mm to 120mm. Activation of the spikes shall be one second or faster. The width of the barrier shall be between 3m and 4m depending on the space available.

The barrier shall be able to handle weight up to 20 tons. The spikes shall have the same effect as a barrier even if it is approached from the wrong side, against the traffic direction.

2. Boom

The boom arm shall be manufactured from aluminum and white powder coated with red reflective tape every 250mm.

The boom and spike barrier shall operate together as a complete unit.

A traffic signal light with a red and green light shall be provided. The diameter of the lights shall be 150mm or more. As the boom lowers the spike barrier will raises to its full height and the traffic signal light shall be red. When the spikes are recessed and the boom is lifted the traffic signal light shall be green. The boom arm shall lower or raise time shall be less than 4 seconds. The boom arm shall be equipped with an aluminum pedestrian curtain.

Road ordinance compliant traffic lights fitted to the unit (red and green) to ensure no vehicles proceed before the spike barrier is down. Road ordinance compliant STOP and NO ENTRY signs shall be installed.

The plinth for the boom shall be cast with 20Mpa concrete. Sleeves shall be cast into the concrete to allow all cables to terminate from the bottom.

3. Vehicle loop detectors / IR beams

Vehicle loop or IR beam detectors shall be installed to prevent damage to motor vehicles and to provide a closing signal to allow the boom to lower and the spikes to be exposed.

An emergency activation button shall however be installed to activate the spikes immediately in case of emergency. The emergency button shall override all other controls. Emergency situation can only be reset by supervisor after an investigation is done.

4. Materials

The equipment shall be manufactured from corrosion resistant materials and shall be of high durability and engineered for long-term reliability. Material thickness shall be adequate to handle weight of vehicles up to 20 tons. All bearings shall be of a sealed type.

5. Electrical

All electrical equipment shall be installed in IP 54 enclosures. Full electrical isolation and overload protection shall be provided. In case of power or mechanical failure it shall be possible to manually override the spike boom barrier. An isolator shall be provided in the control room from where the system shall be operated / monitored. All cabinets shall be powder coated in red and white. Electric motor/s shall be of standard 220V AC, 100% duty cycle, and instant reverse torque drive. Sleeves shall be installed for all data and electrical cabling. Data and electrical cabling shall be installed in separate sleeves.

6. Accessibility

The equipment shall be easily accessible for maintenance and repair purposes as well as for manual operation. The access panel shall be lockable.

7. Excavations and draining

The design shall allow for the minimum excavations and simplify the installation. If necessary drainage have to be provided to allow water seepage and prevent water to accumulate in and around the barrier.

8. Installation

The installation shall be done in such a way that it will prevent vehicles from driving in or out of the premises unauthorized. The traffic light will also face towards the correct side to caution vehicles that the spikes are exposed. The

boom will be installed prior to the spikes to prevent persons driving through the spikes before the boom opens. Correct directions must be determined on site with the user before commencing with the installation.

9. Manufacturers Details

The manufacturer's details and contact numbers as well as serial number, model and make of the equipment shall be displayed on the equipment cabinet and all parts. No equipment without identification shall be accepted.

10. Standards

All equipment shall be of the latest technology and conform to the latest national and international standards applicable to this type of security equipment. SANS, ISO, BS and UL.