

# ANTI-VEHICLE FENCE M50P1 KEM-FP1



**KEM-FP1**

## ABOUT THE PRODUCT

The Anti- Vehicle Fence KEM-FP1 by Al Kuhaimi Engineering Metal Industries (KEMI) which is part of Al Kuhaimi Metal Industries (KMI) is the best solution for securing perimeters of critical infrastructure or hi-security facilities from attacks using vehicle or trucks.

The fence is capable of stopping 6.8 tons weight vehicle traveling with a speed of nominal velocity 80kh/Hr with less than one meter penetration. This was successfully tested to achieve M50P1 rating in accordance with the latest version of ASTM F2656 standard test.

The design offers minimal destruction and repairs to the fence in case of crash attack.

## RATING AND TEST STANDARD

M50P1 as per ASTM F2656 and (HCIS) Higher Commission for Industrial Security directives.



## CONSTRUCTION AND FEATURES

The fence is constructed mainly from steel tubes and steel components. Its main design features is the (10M) free span with no intermediate posts. In addition to this largest free span in the market, the relatively smaller footing foundation means lower costs of civil works and faster installation.

The fence available in standard finish of hot-dip galvanized (HDG) and other finishes on demand.

## QUALITY CONTROL AND QUALITY ASSURANCE

The product is manufactured in KEMI factory at 2nd Industrial City Dammam. This factory is specialized in high quality steel products for security and safety applications.

The conformity of the product to the tested one is assured through the strict QC policy that received approval from major local and international clients such as SAUDI ARAMCO, SABIC, SEC, MODA, RC, BECHTEL, FLUOR, KOC, Etc. The factory is certified by ISO 9001:2015 Certification.

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## AL KUHAIMI ENGINEERING METAL INDUSTRIES (KEMI)

With almost 40 years of experience in the fabrication of custom products, Al Kuhaimi Engineering Metal Industries (KEMI) ranks as leader in the industry in the region in terms of performance, capability and reputation, thanks to our investment in human resources, state-of-the-art technology and equipment. We manufacture a wide range of products of Special Purpose steel fabrication; all are produced in Plant-III in the 2nd Industrial City, Dammam.

In addition to normal steel fabrication; KEMI can custom design any combination of performances and aesthetic requirements. We pride ourselves on the experience and capabilities of the engineering talent we are privileged to attract And who are constantly pursuing aggressive research to ensure our customers receive the most technically advanced solutions in the industry.



Al Kuhaimi Metal Industries  
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Eastern Province Saudi Arabia  
Attention: Mr. Al Kuhaimi

Date: 06/30/17

To Whom it May Concern,

Based upon the test performed on June 28, 2017 at KARCO Engineering, LLC., the as-tested configuration of the KEM-FP1 has received an impact rating of P1 at the M50 test level, based on the ASTM F2656-15 standard test method. The ASTM F2656-15 document is the current version of the test standard, previously designated ASTM F2656-07. This test evaluated the KEM-FP1 for an impact to the center of the fence's width.

The M50 test level of the ASTM F2656-15 is evaluated using a 6,800 kg test vehicle traveling at a nominal velocity of 80 km/h. The P1 penetration rating is given when penetration beyond the protected side of the barrier is less than 1.0 m at the intersection of the leading lower vertical bed edge and the frame rail of the vehicle. Penetration was measured from the vertical plane created by the back (non-impacted) side of the blocking beam.

The KEM-FP1 was subject to damage due to the impact. The blocking beam was bent at the center width span. The vertical posts on both sides of the blocking beam were deformed but retained the blocking elements in place. The vertical post foundations shifted rearward and inboard towards the center of the blocking beam. The opening remained blocked after the impact.

The vehicle was damaged extensively at the front end. The engine was forced rearward into the occupant compartment and the headspace rack bent forward towards the cab. The cab was deformed and leaned forward after the impact. Both front tires were flat and the vehicle was completely disabled. The maximum penetration recorded was 0.95 m on the driver side of the vehicle.

Complete information relating to the test can be found in report number TR-P37202-01-NC and CD serial number 2017-4404 from KARCO Engineering, LLC., including test conditions, test vehicle information, test article specifications, and manufacturer drawings. This letter should not be considered complete documentation of the test without consideration of the test report and deliverable CD.

Sincerely yours,

  
Alex Beltran  
Program Manager  
KARCO Engineering, LLC.



## HEAD OFFICE

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