MFR56 ULTRA LIGHT MACHINE GUN

5,56x45mm CALIBER

DUAL FEED

SEMI AND FULL AUTOMATIC

CLOSED BOLT

MFR56 ULTRA LIGHT MACHINE GUN (5,56x45mm)

TECHNICAL SPECIFICATIONS

CALIBER / CARTRIDGE	: 5,56x45mm NATO
BARREL	: Quick Change Barrel System / 14.5'' Length / Forged
TWIST RATE	: 1/7
ACTION	: Short Stroke, Gas Piston Operation, Closed Bolt System
MUZZLE VELOCITY	: 850m/s
TRIGGER PULL	: 20-40 Newton
FEED SYSTEM	: Magazine / Belt / Ammo Drum-Box
MAGAZINE TYPE	: Polymer
MAGAZINE CAPACITY	: 30
GRIP TYPE	: Polymer
AMMUNITION BELT TYPE	: M27
RATE OF FIRE	: 700-1100min
FIRING MODE	: Full Automatic / Semi Automatic
BUTTSTOCK	: Telescopic Adjustable 6 Axis
TRIGGER TYPE	: MIL-SPEC
HANDGUARD TYPE	: MIL-STD 1913 Picatinny Rail
LENGTH	: 755mm
WIDTH	: 77,6mm
HEIGHT	: 243mm
EFFECTIVE FIRING RANGE	: 550m
MAX. FIRING RANGE	: 3500m
WEIGHT	: 4250g
DISPERSION	: 3 MOA
BUFFER TYPE	: MIL-SPEC H3 Buffer
FRAME	: Forged AL7075 – T6
SAFE TYPE	: 3 Position Pictogram Safety Latch

TESTING

1- LOW TEMPERATURE

This test was carried out with 3 guns at -51˚ temperature in accordance with the conditions specified in NATO MIL-STD 810/ TOP 3-2-045 Small Arms Test Operatıons Procedures. The 200 round is conditioned for at least 12 hours with the gun. Then 200 round shot in single, pulsed and serial mode.

Result : PASSED.

Explanation: Intermediate conditioning and shots specified in the procedure were performed. As a result of the shooting, there was no functional error in the gun. In the control of the piece after the shot, broken / cracked etc. No errors were observed.

2- HIGH TEMPERATURE

This test was carried out with 3 guns at +71˚ temperature in accordance with the conditions specified in NATO MIL-STD 810/ TOP 3-2-045. With the gun, the 200 round cartridge is conditioned for at least 12 hours. Then 200 round shot in single, pulsed and serial mode.

Result : PASSED.

Explanation: Intermediate conditioning and shots specified in the procedure were performed. As a result of the shooting, there was no functional error in the gun. In the control of the piece after the shot, broken / cracked etc. No errors were observed.

3- ROUGH HANDLING

To assess the probability of accidental firing of 3 guns, the guns were filled with hollow bullets. The safety latch was placed in the "Security" position and left on the concrete floor at the angles specified in the procedure from a height of 1.5m.

Result : PASSED.

Explanation: This test was performed in accordance with NATO MIL-STD 810/ TOP 3-2-045 Test Procedure.

4- BELT PULL CAPACITY

A pulling test of strip load was carried out in the free fall position by attaching a 1.5 kg weight attached to the tip of the 25-round cartridge.

Result : PASSED.

Explanation: Rounds fired at least in 4 series without any problems.

5- HIGH PRESSURE AND STRENGTH

The 1st and 2nd cartridges were made as high-pressure test cartridges with 100 round pulsed with 10 rifles . After shooting, the rifles were disassembled and the parts exposed to pressure were checked for cracks/fractures.

Result : PASSED.

Explanation: Visual inspection and dye penetrant control were performed on all 10 rifles, and no fractures/cracks were observed.

6- PARTS INTERCHANGE

With five weapons;

- Barrel Assembly,
- Feed Tray and Feed Cover Assembly,
- Receiver
- Bolt Carrier Group,
- Lower Receiver Assembly

These parts of the weapons were disassembled and interchanged to create new five weapons and 50 rounds were fired.

Result : PASSED.

Explanation: There was no shooting problem in 5 guns as a result of the interchanged.

7- COOKOFF

200 rounds are fired in a way to wait 60 seconds in the last cartridge. Spontaneous ignition is observed. If 500 rounds can be fired before the firing point is formed, or if the gun can no longer be fired normally due to heat, the test is terminated without determining the firing point. The cookoff point is verified by firing three trials where cooking does not occur.

Result : Cooking occurs on average at the 350 round.

8- ACCURACY AND DISPERSION

Zeroing shots were made, and 3 guns, whose sights were in the lower limit distance division, were fired with a fully automatic 5 rounds at targets 50 meters ahead. The shot must be within a circle with a diameter of at most 10cm.

Result : PASSED.

Explanation : All three guns were measured within 3 MOA.

9- FIRE RATE

Average firing rates were measured by firing 10 rifles in serial mode with 10 rounds.

Result : PASSED.

Explanation: The pulse rate per minute should be in the range of 700-1100. The average firing rates of 10 guns were measured as 700-1100.

10-TRIGGER PULL

Trigger pull forces of 10 guns were measured as 2.2 – 3kg.

Result : PASSED.

Explanation: The trigger pull of the rifle (with the rifle in the cocked position) must be at least 2kg and at most 4kg.

11-RELIABILITY AND DURABILITY

10,000 rounds were fired, of which 8,800 with a belt and 1200 with a magazine.

Result : As a result of the shooting, there was no functional error in the gun. In the control of the piece after the shot, broken / cracked etc. No errors were observed.

Explanation: After the 8000 shot, ASTM E 1417 dye penetrant test was performed. No fractures, cracks or functional defects were observed in the parts. Mechanism parts that passed the test were changed only once.

12-SOLAR RADIATION

This test was conducted on a weapon in accordance with NATO MIL-STD 810, Method 505.4, Procedure 1.

Result : PASSED.

Explanation: A three-day cycle with an air temperature of 49˚ was performed and there was no problem in its functional firing.

13-FLASH

This test was conducted by comparing two weapons prepared as specified in NATO MIL-STD 810 procedure. 3 rounds of 20 shots were fired.

Result : There is no increase in the flash of the test gun compared to the standard gun in video recorded shots.

14-CHEMICAL CONTAMINATION

This test was conducted in accordance with TOP 3-2-60913 Chemical Compatibility of Non-Metallic Materials Used in Small Weapons Systems. Samples were tested according to the table specified in TOP 3-2-609.

Result : PASSED.

Explanation: There were no conspicuous loss of polish, decay, discoloration, swelling, bubbling, cracking, dissolution in the sample pieces.

15-SMOKE

This test was conducted by comparing two weapons prepared as specified in NATO MIL-STD 810 procedure. At a range of 100 meters, a 0.3-meter black and white checkerboard placed in line with the gun was used and 3 rounds of 20 shots were fired.

Result : PASSED.

Explanation: In the photos and videos taken, there was no increase in the smoke of the test gun compared to the standard gun.

16-NOISE

In this test, according to TOP 1-2-60814, the gun is mounted 1.6m above the ground. Four microphones were placed at the locations specified in the procedure, five single shots were fired, and sound pressure levels were recorded at each microphone over time.

Result : PASSED.

Explanation : Additional information for equipment specifications and calibration is detailed in the MIL-STD-1474D15 procedure.

17-ATTITUDES TEST

It has been tested with three test guns with 200 rounds in the sight angles and directions specified in the table in accordance with NATO MIL-STD 810 procedure.

Result : PASSED.

Explanation: The weapon successfully passed the firing test in various aspects in accordance with the procedure, and no functional problems were experienced.

18-BLOCKED BARREL

It was made in accordance with the "Bullet Obstruction" clause in NATO MIL-STD 810 procedure. It was clogged in the gun chamber in front of the cartridge chamber by using the same type of bullet. It was shot with a single round and a single cartridge.

Result : PASSED.

Explanation: As a result of the shooting, there was no functional error in the gun. In the control of the piece after the shot, broken / cracked etc. No errors were observed.

19-BARREL PERFORMANCE

This test, in which changes in barrel design were evaluated, was also used to improve barrel wear data. The barrel that came out of the Reliability and Durability test was inspected as specified in NATO MIL-STD 810 procedure.

Result : PASSED.

Explanation: The bore of the barrel was examined with the help of a borescope and it was observed that the deterioration started towards the end of the barrel's life, but the wear was minimal. The test was passed because the group of bullets fired at the target deviated less than 20 percent.

20-TOXIC FUMES

As specified in the NATO MIL-STD 810 test procedure, 2 weapons were prepared. The test was conducted in the same room as the comparison type. The standard gun and test gun were fired 3 times.

Result : PASSED.

Explanation : Similar gunpowder concentration level was measured in the test gun compared to the standard gun according to the procedure.

21-RECOIL ENERGY AND KINEMATICS

Recoil was measured in terms of momentum and kinematic energy using five-string and three-string suspended pendulums in accordance with NATO TOP 3-2-82618 Procedure for Kinematic Tests of Small Arms.

Result : PASSED.

Explanation: Three trials were made with each weapon configuration and recoil values were calculated according to TOP 3-2-826.

22-AMMUNITION COMPATIBILITY

As specified in the NATO MIL-STD 810 procedure, 2000 rounds were fired with each weapon using three test guns with different ammunition types with Reliability and Endurance test procedure firing intervals.

Result : PASSED.

Explanation: Each weapon has been thoroughly studied and has shown no unusual wear, deposits, or maintenance requirements.

23-ACCESSORY COMPATIBILITY

Tested with various accessories (straps, bayonets, handles, fork legs) as specified in NATO MIL-STD 810 procedure.

Result : PASSED.

Explanation: There were no assembly or compatibility problems.