



**THE HIGHWAY INSTITUTE**  
Building Materials Department  
Asphalt, Bitumen & Waterproofing Section



## REPORT

ON TESTING OF  
WATERPROOFING MEMBRANE  
MULTIGUM

MANUFACTURER "BITUM ltd" - ISRAEL  
Analysis number: HM - 03/05

Applicant: "ENERGOPROJEKT- PROMET" ltd. -  
Belgrade

BELGRADE  
- 2005 -

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account no: 205-9478-75



**The Highway Institute**  
Building Materials Department  
Asphalt, Bitumen & Waterproofing Sector

ИНСТИТУТ ЗА ПУТЕВЕ А.Д.  
Бр. 80-609  
05.10. 2005 год.  
БЕОГРАД  
Кумодрашка 257, факс 48-31

**GENERAL DATA:**

Object: **REPORT ON TESTING OF WATERPROOFING MEMBRANE  
MULTIGUM  
(Analysis number: HM - 03/05)**

Product: **Waterproofing membrane MULTIGUM  
on the basis of acrylic resin**

Manufacturer: **"BITUM ltd" , Israel**

Applicant: **"ENERGOPROJEKT-PROMET"  
11070 Belgrade  
Av. Mihaila Pupina 12.**

Request: **from 05. October 2004.**



Executor: **THE HIGHWAY INSTITUTE, Belgrade, 257 Kumodraska St.  
Building Materials Department  
Asphalt, Bitumen & Waterproofing Section**

Date: **February 2005.**

HEAD OF SECTION

  
Imre Pap, BSc.TEng., Msc, PhD

DEPARTMENT MANAGER

  
  
Slobodan Joksimovic, Bsc, MSc.Geol.



## 1. INTRODUCTION

With regard to your request from 05.10.2004, a testing of waterproofing membrane MULTIGUM, manufactured by "BITUM Ltd" Israel, has been carried out in Asphalt, Bitumen & Waterproofing Sector of Building Materials Department, The Highway Institute - Belgrade

The applicant's representative has selected and prepared coated specimens about 10x60 cm, and about 2 mm thick of waterproofing membrane MULTIGUM and delivered them to The Highway Institute for testing on 05.10.2004.

## 2. TYPE OF TESTS

Testing of delivered samples of waterproofing membrane MULTIGUM has been performed according to manufacturers declaration, in Asphalt, Bitumen & Waterproofing Department, The Highway Institute - Belgrade.

Testing of following membrane characteristics was undertaken:

- appearance;
- tensile strength at fracture;
- elongation at fracture;
- cold flexibility;
- water tightness;

## 3. TEST RESULTS

Test results are given in the Report on Waterproofing Membrane.



## REPORT ON TESTING OF WATERPROOFING MEMBRANE

Analysis number:	HM-03/05
Manufacturer:	"BITUM ltd" – Israel
Date of production:	Unknown
Sample mark:	Waterproofing membrane MULTIGUM
Applicant and request number:	"ENERGOPROJEKT-PROMET" - Belgrade, from 05.10.2004.
Date and place of sampling:	05.10.2004., delivered by Applicant
Sampling is handled by:	Applicant's representative
Testing completion date:	07.02.2005.

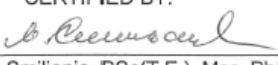
CHARACTERISTIC	TESTING RESULTS	MANUFACTURES DECLARATION
1. Appearance	membrane, blue/white colour	membrane, blue/white colour
2. Tensile strenght at fracture MPa	2.4	min. 2.0
3. Elongation at fracture %	268	min. 250
4. Cold flexibility °C	no cracs at -10	no cracs at <0
1.5. Watertightness	tight over 24 hours at 1 bar	tight over 24 hours at 1 bar

**CONCLUSION:** The tested sample of waterproofing membrane MULTIGUM, manufactured by "BITUM ltd" – Israel, according to ASTM 6083/97a, fulfills the requirements of manufactures declaration.

TEST MANAGED BY:

  
Jadranka Matejic, Chem, Techn.

CERTIFIED BY:

  
Milorad Smiljanic, BSc(T.E.), Msc, PhD



## THE HIGHWAY INSTITUTE

Building Materials Department  
Asphalt, Bitumen & Waterproofing Section



### REPORT

#### ON TESTING OF WATERPROOFING PRIMER MULTIGUM

MANUFACTURER "BITUM Ltd." ISRAEL

Analysis number: HP - 02/05

Applicant: "ENERGOPROJEKT-PROMET" Ltd. -  
Beograd

BELGRADE  
- 2005 -





**The Highway Institute**  
Building Materials Department  
Asphalt, Bitumen & Waterproofing Section

ИНСТИТУТ ЗА ПУТЕВЕ А.Д.  
Бр. 80-669  
02. 2005. год.  
БЕОГРАД  
Кумодрашка 257, факс 48-31

**GENERAL DATA:**

Object: **REPORT ON TESTING WATERPROOFING PRIMER  
MASTIGUM**  
(Analysis number: HP- 02/05)

Product: **Waterproofing primer MASTIGUM  
on the basis of acrylic resin**

Manufacturer: **"BITUM Ltd.", Israel**

Applicant: **"ENERGOPROJEKT- PROMET"  
Belgrade  
Av. Mihaila Pupina 12.**

Request: **from 05. October 2004.**

Executor: **THE HIGHWAY INSTITUTE, Belgrade, 257 Kumodraska St.  
Building Materials Department  
Asphalt, Bitumen & Waterproofing Section**

Date: **February 2005.**

**HEAD OF SECTION**

  
Imre Pap, BSc.TEng., Msc, PhD

**DEPARTMENT MANAGER**

  
Slobodan Joksimovic, Bsc, MSc.Geol.



## 1. INTRODUCTION

With regard to your request from 05.10.2004, a testing of bituminous primer MULTIGUM, manufactured by "BITUM" ltd. from Israel, has been carried out in Asphalt, Bitumen & Waterproofing Section of Building Materials Department, The Highway Institute - Belgrade

The applicant's representative has delivered a sample of bituminous primer MULTIGUM to The Highway Institute for testing on 05.10.2005.

## 2. TYPE OF TESTS

Testing of delivered sample of bituminous primer MULTIGUM has been performed according to JUS U.M8.085/1980 ("Waterproofing Materials. Investigation Methods.") and manufacturers declaration, in Asphalt, Bitumen & Waterproofing Department, The Highway Institute – Belgrade.

Testing of following waterproofing primer characteristics was undertaken:

- external appearance;
- content of dry material;
- water content;
- specific gravity;
- water tightness;
- drying time;

## 3. TEST RESULTS

Test results are given in the Report on Testing of Waterproofing Primer.





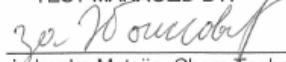
## REPORT ON TESTING OF WATERPROOFING PRIMER

Analysis number:	HP-02/05
Manufacturer:	"BITUM" Ltd. Israel
Date of production:	Unknown
Sample mark:	Waterproofing primer MULTIGUM
Applicant and request number:	"ENERGOPROJEKT-PROMET" - Belgrade, from 05.10.2004.
Date and place of sampling:	05.10.2004., delivered by Applicant
Sampling is handled by:	Applicant's representative
Testing completion date:	07.02.2005.

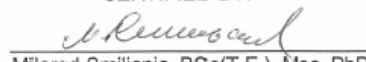
CHARACTERISTIC	TESTING RESULTS	MANUFACTURERS DECLARATION
1. External appearance	homogenous liquid, milky white color	homogenous liquid, milky white color
2. Content of dry material %	22	min. 20
3. Water content %	78	max. 80
4. Specific gravity kg/l	1.31	1.35
5. Watertightness	tight over 8 hours at 1 bar	tight over 8 hours at 1 bar
6. Drying time min	45	max. 120

**CONCLUSION:** The tested sample of bituminous waterproofing primer MULTIGUM, manufactured by "BITUM Ltd." – Israel, according to JUS U.M8.085/1980 ("Waterproofing Materials. Investigation Methods."), fulfills the requirements specified by manufacturers declaration.

TEST MANAGED BY:

  
Jadranka Matejic, Chem. Techn.

CERTIFIED BY:

  
Milorad Smiljanic, BSc(T.E.), Msc, PhD