



THE HIGHWAY INSTITUTE

Building Materials Department
Asphalt, Bitumen & Waterproofing Section



REPORT

ON TESTING OF
BITUMINOUS WATERPROOFING MEMBRANE
MASTIGUM

MANUFACTURER "BITUM Ltd." ISRAEL

Analysis number: HM - 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. 88-124
4.2 2005 год.
БЕОГРАД
Кумодрашка 257, факс 48-31

GENERAL DATA:

Object: **REPORT ON TESTING BITUMINOUS WATERPROOFING MEMBRANE MASTIGUM**
(Analysis number: HM-02/05)

Product: **Bituminous waterproofing membrane MASTIGUM on the basis of latex-modified bituminous emulsion**

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 waterproofing membrane MASTIGUM, 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 selected a 4 coated prepared specimens about 20x60 cm, and, about 2,5 to 4 mm thick of bituminous membrane MASTIGUM and delivered them to The Highway Institute for testing on 05.10.2005.

2. TYPE OF TESTS

Testing of delivered samples of bituminous waterproofing membrane MASTIGUM has been performed according to DIN 18195 part 2 and ASTM-D 412, in Asphalt, Bitumen & Waterproofing Department, The Highway Institute – Belgrade.

Testing of following bituminous membrane characteristics was undertaken:

- softening point R & B;
- penetration at 25°C;
- heat resistance;
- cold flexibility;
- water tightness;
- tensile properties (strength, elongation and recovery);

3. TEST RESULTS

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



REPORT ON TESTING OF BITUMINOUS WATERPROOFING MEMBRANE

Analysis number:	HM-02/05
Manufacturer:	"BITUM" Ltd. Israel
Date of production:	Unknown
Sample mark:	Bituminous waterproofing membrane MASTIGUM
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:	04.02.2005.

CHARACTERISTIC	TESTING RESULTS	DIN 18195-2
1.1 Softening point R & B (solid body waterfree) °C	141	≥ 90
1.2 Penetration at 25°C (cone penetration) 0,1 mm	37	-
1.3 Heat resistance °C	+100	no flow at +70
1.4 Cold flexibility °C	no cracks at -10	no cracks at ≤ 0
1.5 Watertightness	tight over 24 hours at 2 bar	tight over 24 hours at 0,075 bar
TENSILE PROPERTIES		ASTM D 412
1.6 Tensile strength N/mm ²	0,33	-
1.7 Elongation %	1,823	-
1.8 Recovery %	88	-

CONCLUSION: The tested sample of bituminous waterproofing membrane MASTIGUM, manufactured by "BITUM Ltd." – Israel, according to DIN 18195 part 2 and ASTM–D 412, fulfills the requirements specified by DIN 18195 part 2 for bituminous waterproofing membrane.

TEST MANAGED BY: *ZA*

Stojanka Petković
Jadranka Matejic, Chem. Techn.

CERTIFIED BY:

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



THE HIGHWAY INSTITUTE

Building Materials Department
Asphalt, Bitumen & Waterproofing Section



REPORT

ON TESTING OF BITUMINOUS WATERPROOFING PRIMER MASTIGUM

MANUFACTURER "BITUM Ltd." ISRAEL
Analysis number: HP - 01/05

Applicant: "ENERGOPROJEKT-PROMET" ltd. -
Beograd

BELGRADE
- 2005 -

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

ИНСТИТУТ ЗА ПУТЕВЕ А.Д.
Бр. 16-127
12. 2005 год.
БЕОГРАД
Кумодрашка 257, факс 48-31

GENERAL DATA:

Object: **REPORT ON TESTING BITUMINOUS WATERPROOFING PRIMER
MASTIGUM**
(Analysis number: HP-01/05)

Product: **Bituminous waterproofing primer MASTIGUM
on the basis of latex-modified bituminous emulsion**

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 MASTIGUM, 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 MASTIGUM to The Highway Institute for testing on 05.10.2005.

2. TYPE OF TESTS

Testing of delivered sample of bituminous primer MASTIGUM has been performed according to JUS U.M8.085/1980 ("Waterproofing Materials. Investigation Methods.") and JUS U.M3.242 ("Materials for damp-proof courses based on bitumenous emulsions, for cold process."), in Asphalt, Bitumen & Waterproofing Department, The Highway Institute – Belgrade.

Testing of following bituminous primer characteristics was undertaken:

- external appearance;
- bitumen content;
- water content;
- softening point R & B;
- water tightness;
- drying time;

3. TEST RESULTS

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



REPORT ON TESTING OF BITUMINOUS WATERPROOFING PRIMER

Analysis number:	HP-01/05
Manufacturer:	"BITUM" ltd. Israel
Date of production:	Unknown
Sample mark:	Bituminous waterproofing primer MASTIGUM
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:	04.02.2005.

CHARACTERISTIC	TESTING RESULTS	JUS U.M3.242
1. External appearance	homogenous liquid, black color	homogenous liquid, black color
2. Bitumen content %	62	min. 30
3. Water content %	38	max. 70
4. Softening point R & B °C	89	min. 60
5. Watertightness	tight over 24 hours at 1 bar	tight over 8 hours at 1 bar
6. Drying time min	140	max. 180

CONCLUSION: The tested sample of bituminous waterproofing primer MASTIGUM, manufactured by "BITUM ltd." – Israel, according to JUS U.M8.085/1980 ("Waterproofing Materials. Investigation Methods.") and JUS U.M3.242 ("Materials for damp-proof courses based on bituminous emulsions, for cold process."), fulfills the requirements specified by JUS U.M3.242 ("Materials for damp-proof courses based on bituminous emulsions, for cold process.").

TEST MANAGED BY:

Jadranka Petrović
Jadranka Matejic, Chem.Tech.

CERTIFIED BY:

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