

AGENȚIA PROPRIETĂȚII PUBLICE A
REPUBLICII MOLDOVA
S.A. „Drumuri-Criuleni”



АГЕНСТВО ПУБ. СОБСТВЕННОСТИ
РЕСПУБЛИКИ МОЛДОВА
А.О. ”Друмурь-Криулень”

✉ MD-4801, or.Criuleni str.Stepelor, 5
☎ (248) 2-23-85, 2-24-89
e-mail: criuleni_drum@asd.md,
c/f: 1003600095963
capital social: **42389960 lei**.

✉ МД-4801, г. Криулень ул. Степелор, 5
☎ (248) 2-23-85, 2-24-89
e-mail: criuleni_drum@asd.md
c/f: 1003600095963
уставной капитал: **42389960 лей**.

Către Consiliul raional Criuleni

Declarație

Prin prezenta S.A.”Drumuri Criuleni” declară că va produce mixtura asfaltică conform noilor cerințe europene (BA 16 și BA 22,4 50/70 SM EN 13108-1), conform cerințelor aprobate pentru obiectul „**Reparația și întreținerea drumurilor publice locale de interes raional, raul Criuleni pentru anul 2021**”, [ocds-b3wdp1-MD-1625060512262](#) S.A.”Drumuri Criuleni declară că are deja elaborate rețetele mixturilor asfaltice conform cerințelor din SM EN 13108 -1 .

Director

Al.Popov

CHARACTERISTICI FIZICO-MECANICE ALE MIXTURII PREPARATE IN LABORATOR (PHYSICAL-MECHANICAL MIX PREPARED IN THE LABORATORY)
 TIP/TYPE BA 16 rul 70/100 (Conform SR EN 13108-1:2006;SR EN 13108-1:2006/AC:2008/IC91:2014)

Nr.crt	Denumirea incercarii/Test name	U.M	Standard de metoda /Standard method	Dozaj de bitum/Dosage bitumen	Conditii tehnice conf./Technical conditions acc. SR EN 13108-1:2006,SR EN 13108-1:2006/AC:2008/IC91:2014
1	Coefficient de corectie in functie de Masa volumica reala/Correction coefficient depending on the actual density	-		5.5 5.7 5.9 6.1 6.3	
2	Raport fier/ liant /Report filler / binder	%	AND 605:2016	0.9868	
3	Dozaje de bitum corectate cu coeficientul calculat la punctul 1/Dosages of pitch correction coefficient calculated at point 1	-		5.4 5.6 5.8 6.0 6.2	TLmin 5.8
4	Incerari pe cilindrii confectionati cu compactorul Marshall/Crash tests on the Marshall roller	°C	SR EN 12697-30:2019	137	
4.1	Temperatura de compactare/Temperature of compaction			50	
4.2	Numar de lovituri pe fata/Number of strikes/side				
4.3	Incarcarea Marshall/Marshall's attempt				
4.3.1	Stabilitate/Stability Marshall, S	KN	SR EN12697-34:2012	5.4 7.7 10.4 8.3 6.7	Smin.10... Smax 12.5
4.3.2	Curgere/Flow, F	mm		2.6 2.9 3.2 3.5 3.7	F4
4.3.3	Coefficient Marshall/Marshall Coefficient	KN/ mm		2.1 2.7 3.3 2.4 1.8	Omin.3.0
4.4	Determinarea densitatii aparente a epruvetelor bituminoase .Metoda SSD/Determination of apparent density of bituminous specimens. SSD method	Mg/mc	SR EN12697-6:2012.	2.238 2.267 2.296 2.271 2.246	
4.5	Determinarea absorbtiei de apa/Determination of water absorption	%	AND 605:2016	2.2 2.0 1.8 1.6 1.4	
5	Determinarea caracteristicilor volumetrice ale epruvetelor bituminoase/Determination of the volumetric characteristics of bituminous specimens	-			
5.1	Procent de goluri in scheletul mineral umplute cu liant /Percentage of gaps filled with bitumen VFB	%	SR EN 12697-8:2019	83	VFB min.78 VFB max.86
5.2	Procentul golurilor de aer Vm/Percentage of air voids	%		2.7	Vmin.2.5 Vmax.3.0
5.3	Procentul volumului de goluri din scheletul mineral VMA/The percentage of void volume in the mineral skeleton	%		16	VMA min.14
6	Cilindrii confectionati cu presa de compactare giratorie/Cylinders made with rotary compaction press		SR EN 12697-31:2019		
6.1	Determinarea procentului de goluri din epruvetele confectionate cu presa de compactare giratorie la 10 giratii /Determination of the percentage of voids in specimens made with the roundabout press at 10 turns	%	SR EN12697-31:2019	9.8	V10Gmin.9
6.2	Determinarea procentului de goluri din epruvetele confectionate cu presa de compactare giratorie la 80 giratii /Determination of the percentage of voids in specimens made with the roundabout press at 80 turns	%		2.7	
6.3	Determinarea rigiditatii * Incarcarea prin aplicarea unei intinderi indirecte pe epruvetele trapezoidale sau cilindrice/ Determination of stiffness/Testing by applying an indirect stretch to trapezoidal or cylindrical specimens at 20°C ,124 ms,	Mpa	SR EN12697-26:2018-ANEXA-A/ANEXA C	4482	Smin.3600 Smax. 7000
6.4	Incarcarea la compresie ciclica. Determinarea rezistentei la deformatii permanente/Attempt to cyclic compression.				
6.4.1	Deformatia la 50°C ,300KPa si 10000 impulsuri /Deformation at 50 ° C, 300KPa and 10000 pulses.	µm/mm	SR EN 12697-25 :2016 .Metoda B		
6.4.2	Viteza de deformatie la 50°C,300 KPa si 10000 impulsuri/Strain rate at 50 ° C, 300KPa and 10000 pulses.	µm/mm/ciclu		13992	fomax0.4
6.5	Determinarea sensibilitatii la apa a epruvetelor bituminoase .Metoda A/Determination of water sensitivity of bituminous specimens. Method A	%	SR EN 12697-12:2018	85	ITSR80
7	Incarcarea de ormaraj/The ormary attempt				
7.1	Viteza de deformatie la ormaraj la 60°C (WTSaer)/Deformation speed for wheel tracking at 60°C	mm/10'ciclul	SR EN 12697-22+A1:2007	0.03	WTSaer0.05
7.2	Adancimea fagasului,% din grosimea initiala a probei,max. PRD air/The deepness of the wheel track, % from the initial sample bulk, max PRD air	%		4.4	PRDAirs

NOTA: *Incarcarile marcate cu * NU sunt acoperite de acreditarea RENAR/The tests marked with * are NOT covered by RENAR accreditation
 Conform rezultatelor obtinute se alege varianta cu 5.8 % bitum/According to the results obtained with 5.8 % bitumen choose.
 Sistemul de management al calitatii respecta prevederile din SR EN ISO/IEC 17025:2018/The quality management system complies with the requirements of SR EN ISO /IEC 17025: 2018.
 Declaram pe proprie raspundere ca incercarile nu s-au efectuat sub presiune de nici o forma/We declare on our responsibility that the tests were made under no kind of pressure.
 Prezentul reteta contine 3 pagini s-a eliberat in 2 exemplare/This recipe contains 3 pages and was issued in 2 copies.
 Pentru efectuarea incercarilor s-au utilizat numai metode standardizate/Only standardized methods were used for the tests.
 Raportul nu poate fi multiplicat sau utilizat in alte scopuri fara aprobarea emitentului/The report may not be copied or used for other purposes without approval of the originator.

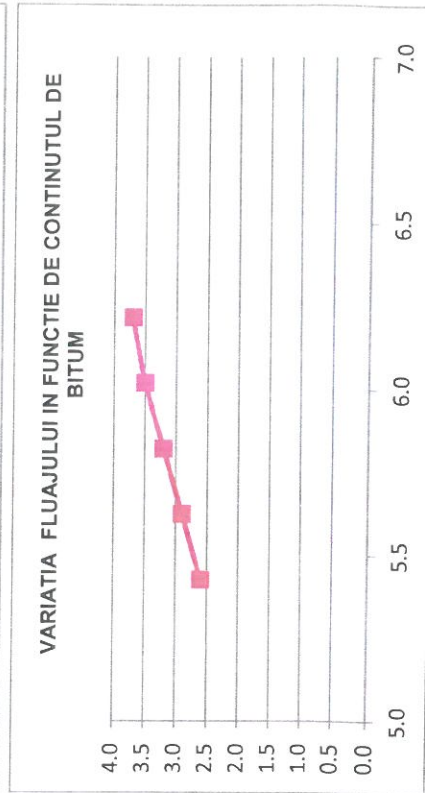
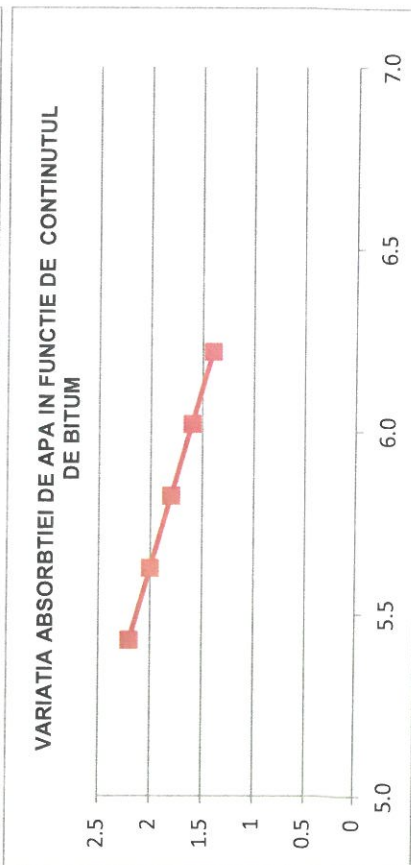
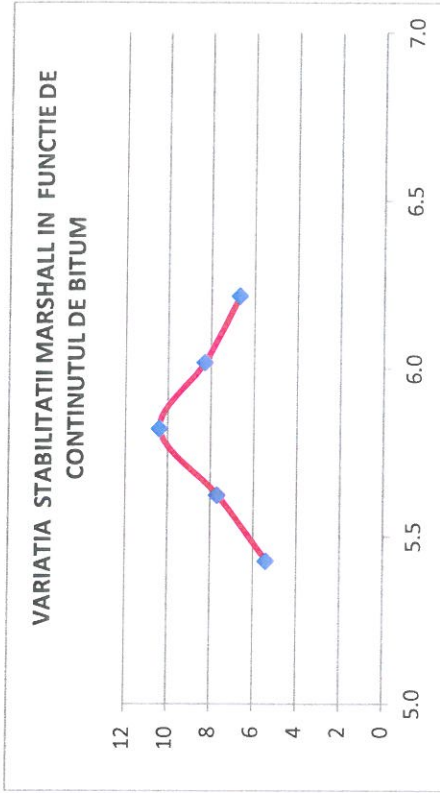
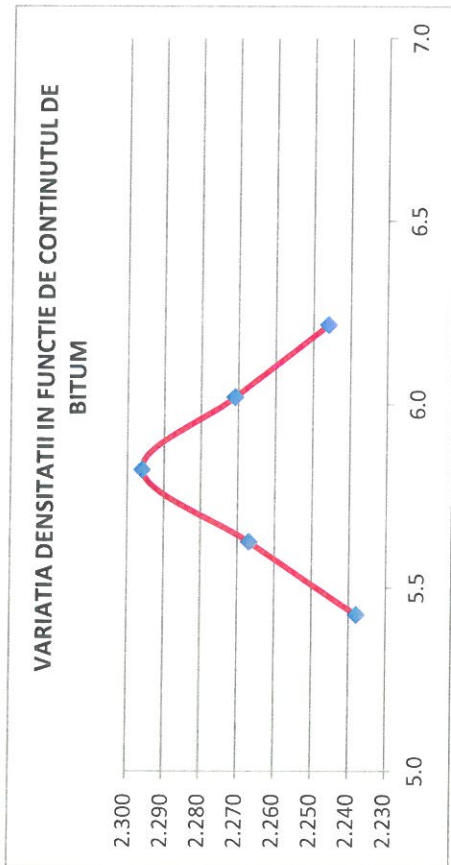
Sef laborator / Laboratory supervisor
 Sef Profilul / Profile of Supervisor
 Manager calitate / Quality manager
 Dr.ing.Mirela TANASESCU
 Ing.Sonica DRAGHICI

* Autorizatie ISC 2742/03.05.2013
 Reautorizat 2017

BUCURESTI - ROMANIA

Executant/ Performer
 lab.Neculai ZAHARIA
 90.3/11.05.2021
 Cod formular F D AGT 14; ed.4/rev.1/2020 pag 2/3

VARIATIA CARACTERISTICILOR FIZICO-MECANICE FUNCTIE DE BITUM/PHYSICAL-MECHANICAL VARIATION BY BITUM ANEXA LA RETETA /ANNEX TO RECIPE BA 16 rui 70/100 (Conform SR EN 13108-1:2006;SR EN 13108-1:2006/AC:2008/C91:2014)



90.3/11.05.2021

Cod formular F D AQT 14; ed.4/rev.1/2020,pag 3/3





LABORATOR DE ANALIZE SI INCERCARI IN CONSTRUCTII SC AQ TESTING BT SRL
 Str. Piculinei , nr.5A, sector 1 , Bucuresti, CIF RO:24056955, Reg.com. J40/10559/2008
 Banca Transilvania-Suc.Sos. Chitilei, RO15 BTRL 0480 1202 K984 04XX
 Telefon- 021 330 2047 ; Fax- 0372 875 074
 office@aqtesting.ro / www.aqtesting.ro
 Laborator grad 1 autorizatie ISC 2742/30.05.2013 reinnoita la data de 30.05.2017+ Anexa 2/11.01.2019
 Laborator autorizat AFER seria AL nr.482/2014 R2

RAPORT DE INCERCARE/ TEST REPORT
ANEXA 1 LA RAPORTUL DE INCERCARE/ANNEX 1 TO THE TEST REPORT
90.3/11.05.2021

Beneficiar /Beneficiary/Adresa/Address: DRUMURI CRIULENI S.A/ Str. Stepelor, nr.5, MD 4801, Criuleni, Republica Moldova
 Contract/Contract:/ Additional/Additional:/ Comanda/Order:41.12/01.03.2021
 Document insotire probe nr./ data ;PV nr. / Document attending the samples no. / date; 62.5/30.03.2021

Tipul materialului/Material type : BA 16 rul 70/100
 Furnizor/Supplier: _____ Producator/Producer: _____
 Locul prelevarii/ Sampling place: _____
 Lucrarea/ Work place: _____
 Esantionare/ Sampling : Prestator /Provider : _____ Beneficiar/Promoter: _____
 Prelevare/ Assay: Prestator /Provider : _____ Beneficiar/Promoter: _____

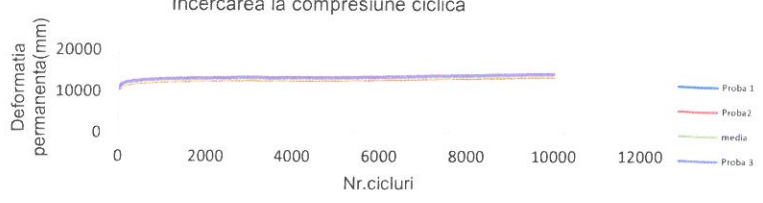
Data prelevarii/Assay date : _____
 Data esantionare/ Sampling date: _____
 Data primirii materialelor /Date of receipt of the materials: 30.03.2021
 Aspect proba/ Sample shape: conform/conformable neconform / inadequate
 Indicativ proba/Laboratory test indicative : 62.13
 Locul executarii /Place of testing: laborator / laboratory teren / site

Incarcarea la compresiune ciclica. Determinarea rezistentei la deformatii permanente/Attempt to cyclic compression. Determination of resistance to permanent deformations
 Conform SR EN 12697-25:2016- Metoda B

Temperatura ambianta/ Room temperature:24°C
 Data prepararii/ Mixing date: 15.04.2021
 Data efectuării încercării/ Date of attempt: 05.05.2021

Diametrul probei/ Sample diameter , mm
 Inaltimea initiala a probei/ Initial height of the sample , mm
 Densitatea aparenta/ Apparent specific gravity , Mg/mc 2.296
 Metoda de preparare/ Compaction type: in laborator,conform SR EN 12697-31:2019.
 Temperatura de incercare/ Testing temperature°C; 50
 Incarcarea aplicata/Loading , kPa 300
 Forma semnalului ciclic/ Form of the signal : incarcare alternativa
 Frecventa incarcarii aplicate/No. of cycles per second Hz : 0.5 Durata impulsului:1s; Perioada de repaus :1s
 Presiunea laterala/ Side pressure: -0,8 bar
 Caracteristici de fluaj/ Features: Conform inregistrarilor date de echipament

Nr.proba	Inaltimea initiala a probei ,mm	Deformatia permanenta ,µm/m		Viteza de deformatie ,µm/m/ciclu
		la 5000 cicluri	la 10000 cicluri	
1	81.0	13057	13970	0.2
2	81.1	12712	13625	0.2
3	80.2	13467	14380	0.2
MEDIA	80.8	13079	13992	0.2



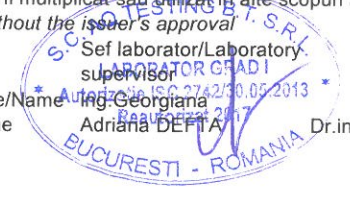
Sistemul de management al calitatii respecta prevederile din SR EN ISO/IEC 17025:2018/The quality management system complies with the requirements of SR EN ISO / IEC 17025: 2018.
 Rezultatele prezentate in raport se refera numai la proba supusa incercarii / Results presented in this report are referring only to the tested samples

Declarăm pe proprie raspundere ca incercarile nu s-au efectuat sub presiune de nici o forma./ We declare on our responsibility that tests were made under no kind of pressure

Prezentul raport de incercare continand 1 pagina s-a elaborat in 2 exemplare / This test report has 1 page it was issued in 2 copies

Pentru efectuarea incercarilor s-au utilizat numai metode standardizate / Only standard methods were used for tests performance
 Raportul nu poate fi multiplicat sau utilizat in alte scopuri fara aprobarea emitentului. / This report can not be multiplied or used for some other purposes without the issuer's approval

Sef laborator/Laboratory supervisor: Ing. Georgiana Adriana DEFTA
 Manager calitate /Quality manager: Dr.ing.Mirela TANASESCU
 Sef Profil D/Profile D Supervisor: ing.Sofica DRAGHICI
 Executant/ Performer: lab.Neculai ZAHARIA





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 Telefon- 021 330 2047 ; Fax- 0372 875 074
 office@aqtesting.ro / www.aqtesting.ro
 Laborator grad 1 autorizatie ISC 2742/30.05.2013 reinnoita la data de 30.05.2017+ Anexa 2/11.01.2019
 Laborator autorizat AFER seria AL nr.482/2014 R2

RAPORT DE INCERCARE/ TEST REPORT

ANEXA 2 LA RAPORTUL DE INCERCARE/ANNEX 2 TO THE TEST REPORT

90.3/11.05.2021

Beneficiar/Beneficiary/Address: DRUMURI CRIULENI S.A/ Str. Stepelor, nr.5, MD 4801, Criuleni, Republica Moldova
 Contract/Contract:/ Additional/Additional:/ Comanda/Order:41.12/01.03.2021
 Document insotire probe nr./ data :PV nr. / Document attending the samples no. / date: 62.5/30.03.2021
 Tipul materialului/Material type : BA 16 rul 70/100

Furnizor/Supplier: — Produsorul/Producer: —

Locul prelevarii/ Sampling place: —

Lucrarea/ Work place: —

Esantionare/Sampling: —

Prelevare/ Assay: —

Data prelevarii/Assay date : —

Data esantionare/ Sampling date: —

Data primirii materialului /Date of receipt of the materials: 30.03.2021

Aspect proba/ Sample shape: conform/conformable

Indicativ proba/Laboratory test indicative : 62.13

Locul executarii /Place of testing: laborator / laboratory

Tipul incercarii/ Type of testing: X teren / site

Temperatura ambientala/ Room temperature:24°C

Probe nr/ No.of samples: 4

Data prepararii/ Mixing date: 15.04.2021

Data efectuării incercării/ Date of attempt: 07.05.2021

Determinarea rigiditatii/ Incercarea prin aplicarea unei intinderi indirect pe epruvete trapezoidale sau cilindrice/ Determination of stiffness/Testing by applying an indirect tension to cylindrical specimen/ Two-point bending test-on trapezoidal specimens la 20°C ,124 ms, SR EN12697-26:2018-ANEXA-A/ANEXA C

Referinta proba Sample reference	Diametru proba Sample diameter (mm)	Grosime proba Thickness sample(mm)	Temp. de test /Test temperature(°C)	Indicele Poisson The Poisson Index	Forța verticală /Vertical force(kN)	Efort orizontal /Horizontal effort(kPa)	Temp crestere /Growth time (ms)	Deformatia orizontala /Horizontal deformation (µm)	Zona factor /Factor area	Modul rigiditate /The rigidity mode(MPa)
pr1	100	64	20	0.35	2.2	221.6	121	3.3	0.58	4522
pr1	100	64	20	0.35	2.2	221.1	121	3.4	0.59	4412
pr2	100	64	20	0.35	2.2	216.2	121	3.6	0.59	4467
pr2	100	64	20	0.35	2.2	222.6	121	3.5	0.59	4441
pr3	100	64	20	0.35	2.2	219.8	121	3.5	0.59	4497
pr3	100	64	20	0.35	2.2	221.7	121	3.9	0.60	4611
pr4	100	64	20	0.35	2.2	221.9	121	3.2	0.58	4546
pr4	100	64	20	0.35	2.2	221.5	121	3.6	0.60	4539
										4300
										4420

Modul de rigiditate 4482 MPa

cod formular F D AQT 23.ed.4/rev. 1/2020 pag 1/2



Sistemul de management al calitatii respecta prevederile din SR EN ISO/IEC 17025:2018/The quality management system complies with the requirements of SR EN ISO / IEC 17025: 2018.

Rezultatele prezentate in raport se refera numai la proba supusa incercarii / Results presented in this report are referring only to the tested samples

Declaram pe proprie raspundere ca incercarile nu s-au efectuat sub presiune de nici o forma/We declare on our responsibility that the tests were made under no kind of pressure.

Prezentul raport de incercare continand 1 pagina s-a elaborat in 2 exemplare / This test report has 1 pages it was issued in 2 copies.

Pentru efectuarea incercarilor s-au utilizat numai metode standardizate / Only standard methods were used for tests performance

Raportul nu poate fi multiplicat sau utilizat in alte scopuri fara aprobarea emitentului. / This report can not be multiplied or used for some other purposes without the issuer's approval

Sef laborator / Laboratory supervisor

ing. Georgiana Adriana DEFTA

LABORATOR GRATI

* Autorizatie ISC 2742/30.05.2013

Reautorizata 2017

BUCURESTI - ROMANIA

Manager calitate / Quality manager

Dr.ing.Mirela TANASESCU

Sef Profil D/Profile D Supervisor

ing.Sofica BRAGHICI

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Executant/Performer

lab.Neculsi ZAHARIA



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 Telefon- 021 330 2047 ; Fax- 0372 875 074
 office@aqtesting.ro / www.aqtesting.ro
 Laborator grad 1 autorizat ISC 2742/30.05.2013 reînnoita la data de 30.05.2017+ Anexa 2/11.01.2019
 Laborator autorizat AFER seria AL nr.482/2014 R2

ANEXA 3 LA RAPORTUL DE INCERCARE/ANNEX 3 TO THE TEST REPORT
RAPORT DE INCERCARE/ TEST REPORT
90.3/11.05.2021

Beneficiar /Beneficiary/Address: DRUMURI CRULENI S.A/ Str. Stepelor, nr.5, MD 4801, Cruleni, Republica Moldova
 Contract/Contract/ Additional/Additional/ Comanda/Order:41.12/01.03.2021
 Document insotire probe nr./ data ,PV nr. / Document attending the samples no. / date: 62.5/30.03.2021
 Tipul materialului/Material type: BA 16 rui 70/100
 Furnizor/Supplier: Producatorul/Producer:

Beneficiar/Beneficiary:
 Beneficiar/Beneficiary:

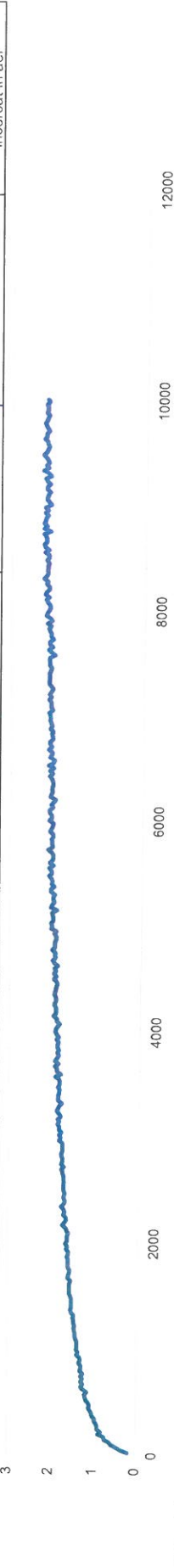
Prestator /Provider :
 Prestator /Provider :

Beneficiar/Beneficiary:
 Beneficiar/Beneficiary:

Data prelevării/Sampling date : 30.03.2021
 Data esantionare/ Sampling date :
 Data primirii materialelor /Date of receipt of the materials:
 Aspect proba/ Sample shape: conform/ conform /
 Indicativ proba/Laboratory test indicative : mable x
 Locul executării /Place of testing: laborator / laborator /
 Tipul incercării/ Type of testing: Incercarea de omieraj/The wheel tracking
 Temperatura ambianta/ Room temperature:24°C
 Data preparării/ Mixing date: 07.05.2021
 Tipul compactionii/ Compaction type: 10.05.2021
 Temperatura de compactare/ Temperature of compaction: 60 °C

Comparație cu rolul neted de oțel sub forma de plăci conform SR EN 12697-33:2019
 60 °C

Nr. Crt	Positia km	Densitatea aparenta/ Metoda SSD/ Bulk Density -Saturated surface dry (SSD) Mg/mc	Temperatura de incercare/ Testing temperature, °C	Grosime medie epruveta/ Average thickness of the sample, mm	Panta de omieraj/ Wheel tracking dip, mm/10000 cicluri	Panta de omieraj/ Average of Wheel tracking dip of WTS _{air} , mm/10000 cicluri	Adancimea medie a fagasului RD _{air} /Average of wheel tracking depth RD _{air} ,mm	Adancimea medie procentuala a fagasului PRD _{air} , %	Standard de metoda/Standard method.
1	-	2.296	60	50	0.033	0.03	2.21	4.4	SR EN 12697-22+A1:2007. Procedeu B cu dimensiuni mici , incercat in aer
2	-			50	0.030		2.18		



Sistemul de management al calitatii respecta prevederile din SR EN ISO/IEC 17025:2018/The quality management system complies with the requirements of SR EN ISO / IEC 17025: 2018.
 Rezultatele prezentate in raport se refera numai la proba supusa incercarii / Results presented in this report are referring only to the tested samples
 Declarăm pe propria raspundere ca incercarea nu s-au efectuat sub presiune de nici o forma/We declare on our responsibility that the tests were made under no kind of pressure.
 Pentru raport de incercare continand 1 pagina s-a elaborat in 2 exemplare / This test report has 1page, it was issued in 2 copies
 Pentru efectuarea incercarilor s-au utilizat numai metode standardizate / Only standard methods were used for tests performance
 Raportul nu poate fi multiplicat sau utilizat in alte scopuri fara aprobarea emitentului. / This report can not be multiplied or used for some other purposes without the issuer's approval

A. Nume si prenumele si adresa
 Set Profil/Profile D Supervisor
 Dr-ing.Mirela TANASESCU
 Manager calitate/ Quality manager
 ing.Sotica DORGHICI
 Executant/ Performer
 lab.Neculai ZAHARIA
 cod formular F D AQT 29.ed 4/rev.1/2020,pag 1/1-



RAPORT DE INCERCARE/ TEST REPORT
Nr./Data 90.5/11.05.2021

Beneficiar /Beneficiary /Adresa/Address: **DRUMURI CRIULENI S.A/ Str. Stepelor, nr.5, MD 4801, Criuleni, Republica Moldova**

Contract/Contract : **Additional/Order: 41.12/01.03.2021**

Document insotire probe nr./ data ;PV nr. / Document attending the samples no. / date: **62.5/30.03.2021**

Sursa agregate /Source of aggregates: **nisipul concasat si criblurile -Cariera Piatra Rosie Cerna**

Tip bitum/Bitumen type: **D70/100; Sursa/Source : RosNefti-Rusia**

Tip filler/Type filler: **calcar ;Sursa /Source : Liormax SRL**

Furnizor/Supplier:

Esantionare/Sampling: **Prestator /Provider :**

Prelevare/ Assay: **Prestator/ Service provider**

Data prelevarii/Assay date :

Data esantionare/Sampling time :

Data primirii materialelor /Date of receipt of the materials: **30.03.2021**

Aspect proba/Sample shape: **conform/conformabil conform/congru 62.15**

Indicativ proba/Laboratory test indicative :

Tipul incercarii/ Type of testing: **Elaborare reteta de mixtura asfaltica tip:**

Locul executarii /Place of testing

Data executarii incercarii/Date of testing :

Temperatura ambientala /Room temperature: **24°C**

Continut bitum /Bitumen content : **4.3 % din mixtura/of the mixture :**

Produsor/Producer: **-**
 Beneficiar/Promoter:
 beneficiar/Promoter:

neconform / inadequate

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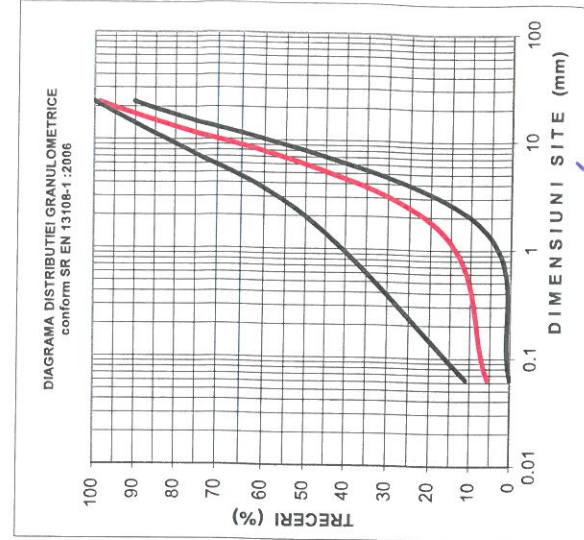
BA22.4 leg 70/100

laborator / laboratory
16.04-11.05.2021

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Conform SR EN 13108-1:2006;SR EN 13108-1:2006/AC:2008/C91:2014 teren / site

Site/ Sieve	GRANULOZITATE conf.SR EN 933-1 :2012, % treceri										Total/Total	Conditii tehnice conf./Technical conditions acc.	
	16..22.4c	8..16c	4..8c	0..4nc	Filer	24	25	22	22	7			
31.5	100	100	100	100	100	16..22.4c	8..16c	4..8c	0..4nc	Filer	100	100	Conform SR EN 13108-1:2006;SR EN 13108-1:2006/AC:2008/C91:2014
22.4	96	100	100	100	100	24	25.0	22.0	22.0	7.0	100	100	min. max.
16	9	97	100	100	100	23.0	25.0	22.0	22.0	7.0	99	100	90
11.2	0	42	100	100	100	2.2	24.3	22.0	22.0	7.0	77	100	-
8	0	9	90	100	100	0	10.5	22.0	22.0	7.0	62	100	-
5.6	0	0	44	100	100	0	2.3	19.8	22.0	7.0	51	100	-
4	0	0	5	95	100	0	0.0	9.7	22.0	7.0	39	100	-
2	0	0	0	66	100	0	0.0	1.1	20.9	7.0	29	100	-
0.500	0	0	0	40	100	0	0.0	0.0	14.5	7.0	22	100	50
0.250	0	0	0	24	100	0	0.0	0.0	8.8	7.0	16	100	-
0.125	0	0	0	12	94	0	0.0	0.0	5.3	7.0	12	100	-
0.063	0	0	0	5	90	0	0.0	0.0	2.6	6.6	9	100	-
						0	0.0	0.0	1.1	6.3	7	100	-
						0	0.0	0.0	0.6	5.1	5.7	100	11



Numa si prenume:
 Name and surname

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ing. Georgiana Adriana DEFTA
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Manager calitate /Quality manager
 Dr.ing.Mirela TANASESCU

Sef Profil D/Profile D Supervisor
 ing.Sofica DRAGHICI

Executant/ Performer
 lab.Neculai ZAHARIA

CHARACTERISTICI FIZICO-MECANICE ALE MIXTURII PREPARATE IN LABORATOR (PHYSICAL-MECHANICAL MIX PREPARED IN THE LABORATORY)
 TIPI/TYPE BA22.4 leg 70/100 (Conform SR EN 13108-1:2006;SR EN 13108-1:2006/AC:2008/C91:2014)

Nr.crt	Denumirea incercarii/Test name	U.M	Standard de metoda /Standard method	Dozaj de bitumi/Dosage bitumen	Conditii tehnice conf./Technical conditions acc. SR EN 13108-1:2006,SR EN 13108-1:2006/AC:2008/C91:2014
1	Coefficient de corectie in functie de Masa volumica reala/Correction coefficient depending on the actual density	-		3.9 4.1 4.3 4.5 4.7	
2	Raport filier liant /Report filler / binder	%		0.9917	
3	Dozaje de bitum corectate cu coeficientul calculat la punctul 1/Dosages of pitch correction coefficient calculated at point 1	%	AND 605:2016	1.6	
4	Incercari pe cilindri confectionati cu compactorul Marshall/Crash tests on the Marshall roller	-		3.9 4.1 4.3 4.5 4.7	TLmin 4.2
4.1	Temperatura de compactare/Temperature of compaction	°C	SR EN 12697-30:2019	140	
4.2	Numar de lovituri pe fata/Number of strikes/side	-		50	
4.3	Incercarea Marshall/Marshall's attempt	-			
4.3.1	Stabilitate/Stability Marshall, S	KN			
4.3.2	Curgere/Flow, F	mm			
4.3.3	Coefficient Marshall/Marshall Coefficient	KN/ mm	SR EN12697-34:2012	5.5 7.7 10.2 8.1 6.0	Smin10... Smax12.5
4.4	Determinarea densitatii aparente a epruvetelor bituminoase. Metoda SSD/Determination of apparent density of bituminous specimens. SSD method	Mg/mc	SR EN12697-6:2012.	2.5 2.8 3.1 3.3 3.5	F4
4.5	Determinarea absorbtiei de apa/Determination of water absorption	%	AND 605:2016	2.2 2.8 3.3 2.5 1.7	O min.3.0
5	Determinarea caracteristicilor volumetrice ale epruvetelor bituminoase/Determination of the volumetric characteristics of bituminous specimens	-		2.214 2.237 2.265 2.240 2.221	
5.1	Procent de goluri in scheletul mineral umplute cu liant /Percentage of gaps filled with bitumen VFB	%		2.6 2.3 2.1 1.9 1.6	
5.2	Procentul golurilor de aer Vm/Percentage of air voids	%	SR EN 12697-8:2019	72	VFB min.70 VFB max.74
5.3	Procentul volumului de goluri din scheletul mineral VMA/The percentage of void volume in the mineral skeleton	%		3.7	Vmin.3.5 Vmax.4.0
6	Cilindri confectionati cu presa de compactare giratorie/Cylinders made with rotary compaction press	%	SR EN 12697-31:2019	13	VMA min12
6.1	Determinarea procentului de goluri din epruvetele confectionate cu presa de compactare giratorie la 10 giratii /Determination of the percentage of voids in specimens made with the roundabout press at 10 turns	%		15.6	V10Gmin14
6.2	Determinarea procentului de goluri din epruvetele confectionate cu presa de compactare giratorie la 120 giratii /Determination of the percentage of voids in specimens made with the roundabout press at 120 turns	%	SR EN12697-31:2019	7.4	
6.3	Determinarea rigiditatii * Incercarea prin aplicarea unei intinderi indirect pe epruvete trapezoidale sau cilindrice/ Incercarea la compresiune ciclica. Determinarea rezistentei la deformatii permanente/Attempt to cyclic compression.	Mpa	SR EN12697-26:2018-ANEXA-A/ANEXA C	5588	Smin 5500 Smax 7000
6.4	Determinarea de rezistenta la deformatii permanente/Attempt to permanent deformations	-			
6.4.1	Deformata la 40°C./200KPa si 10000 impulsuri /Deformation at 40 ° C, 200KPa and 10000 pulses.	µm/m.	SR EN 12697-25 :2016 .Metoda B	9287	
6.4.2	Viteza de deformare la 40°C./200 KPa si 10000 impulsuri/Strain rate at 40 ° C, 200KPa and 10000 pulses.	µm/m/ciclu		0.1	fmax0.2
6.5	Determinarea sensibilitatii la apa a epruvetelor bituminoase. Metoda A/Determination of water sensitivity of bituminous specimens. Method A	%	SR EN 12697-12:2018	90	ITSR90
7	Rezistenta la oboseala, proba cilindrica solicitata la intindere indirecta /Numar minim de cicluri pana la fisurare la 15°C /Resistance to fatigue, cubic sample applicant to stretch indirect evidence. Minimum number of cycles to failure at 15 °	-	SR EN 12697-24:2018-ANEXA-A/ANEXA E	441500	

NOTA: *Incercarile marcate cu * NU sunt acoperite de acreditarea RENAR/The tests marked with * are NOT covered by RENAR accreditation
 Conform rezultatelor obtinute se alege varianta cu 4.3 % bitumi/According to the results obtained with 4. % bitumen choose.
 Sistemul de management al calitatii respecta prevederile din SR EN ISO/IEC 17025:2018/The quality management system complies with the requirements of SR EN ISO /IEC 17025: 2018.
 Declaram pe propria raspundere ca incercarile nu s-au efectuat sub presiune de nici o forma/We declare on our responsibility that the tests were made under no kind of pressure.
 Prezenta reteta contine 3 pagini si 3 Anexe si s-a eliberat in 2 exemplare/This recipe contains 3 pages and 3 Annex and was issued in 2 copies.
 Pentru efectuarea incercarilor s-au utilizat numai metodele standardizate. For tests were used only standardized methods.
 Raportul nu poate fi multiplicat sau utilizat in alte scopuri fara aprobarea emitentului/The report may not be copied or used for other purposes without approval of the originator.

Sef laborator / Laboratory supervisor
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Ing. Georgiana Adriana DEFTA

Dr. Ing. Mihaela TANASESCU

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Ing. Mihaela TANASESCU

Ing. Sofica DRAGHICI

Nume si prenume:
 Name and surname

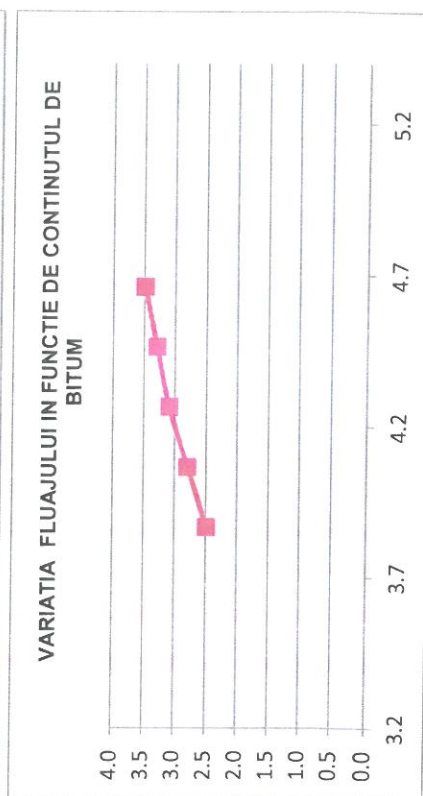
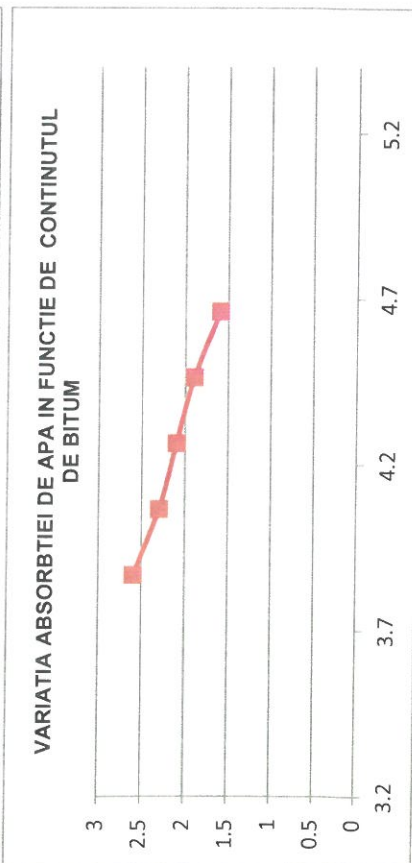
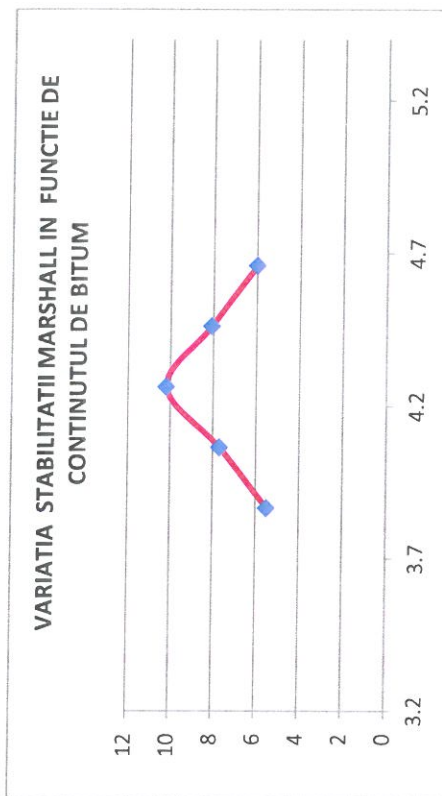
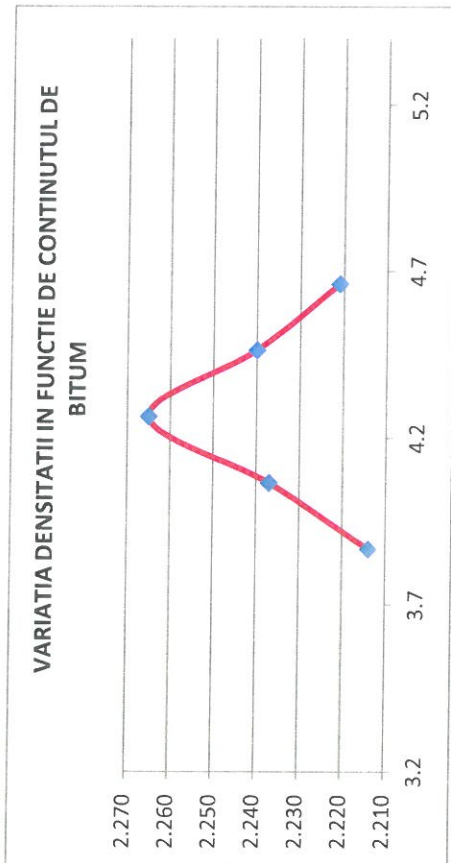
Executant/ Performer
 lab. Necuță ZAHARIA

Nr./Data 90.5/11.05.2021

Cod formular F D AQ/ 14; ed.4/rev.1/2020 pag 2/3



VARIATIA CARACTERISTICILOR FIZICO-MECANICE FUNCTIE DE BITUM/PHYSICAL-MECHANICAL VARIATION BY BITUM ANEXA LA RETETA /ANNEX TO RECIPE BA22.4 leg 70/100 (Conform SR EN 13108-1:2006;SR EN 13108-1:2006/AC:2008/C91:2014)



Nr./Data 90.5/11.05.2021
Cod formular F D AQT 14; ed.4/rev.1/2020,pag 3/3





LABORATOR DE ANALIZE SI INCERCARI IN CONSTRUCTII SC AQ TESTING BT SRL
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 Laborator grad 1 autorizatie ISC 2742/30.05.2013 reinnoita la data de 30.05.2017+ Anexa 2/11.01.2019
 Laborator autorizat AFER seria AL nr.482/2014 R2

RAPORT DE INCERCARE/ TEST REPORT
ANEXA 1 LA RAPORTUL DE INCERCARE/ANNEX 1 Nr./Data **90.5/11.05.2021**
TO THE TEST REPORT

Beneficiar /Beneficiary/Adresa/Address: DRUMURI CRIULENI S.A/ Str. Stepelor, nr.5, MD 4801, Criuleni, Republica Moldova
 Contract/Contract:/ Additional/Additional:/ Comanda/Order:41.12/01.03.2021
 Document insotire probe nr./ data ;PV nr. / Document attending the samples no. / date; 62.5/30.03.2021
 Tipul materialului/Material type : BA22.4 leg 70/100

Furnizor/Supplier: _____ Producator/Producer: _____
 Locul prelevarii/ Sampling place: _____
 Lucrarea/ Work place: _____
 Esantionare/Sampling : _____ Prestator /Provider : _____ Beneficiar/Promoter: _____
 Prelevare/ Assay: _____ Prestator /Provider : _____ Beneficiar/Promoter: _____

Data prelevarii/Assay date : _____
 Data esantionare/ Sampling date: _____
 Data primirii materialelor /Date of receipt of the materials: 30.03.2021
 Aspect proba/ Sample shape: conform/conformable neconform / inadequate
 Indicativ proba/Laboratory test indicative : 62.15
 Locul executarii /Place of testing: laborator / laboratory teren / site

Incarcarea la compresiune ciclica. Determinarea rezistentei la deformatii permanente/Attempt to cyclic compression. Determination of resistance to permanent deformations
 Conform SR EN 12697-25:2016- Metoda B

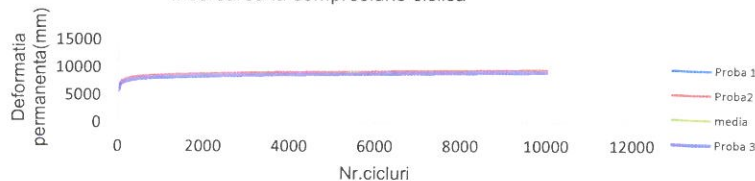
Temperatura ambianta/ Room temperature:24°C
 Data prepararii/ Mixing date: 21.04.2021
 Data efectuării încercării/ Date of attempt: 03.05.2021

Diametrul probei/ Sample diameter , mm	Proba/ Sample 1	Proba /Sample 2	Proba /Sample 3	100
	100.0	100	100	
Inaltimea initiala a probei/ Initial height of the sample , mm	Proba/ Sample 1	Proba /Sample 2	Proba /Sample 3	80.2
	80.6	80.1	80.1	

Densitatea aparenta/ Apparent specific gravity , Mg/mc 2.265
 Metoda de preparare/ Compaction type: in laborator,conform SR EN 12697-31/2007.
 Temperatura de incercare/ Testing temperature°C; 40
 Incarcarea aplicata/Loading , kPa 200
 Forma semnalului ciclic/ Form of the signal : incarcare alternativa
 Frecventa incarcarii aplicate/No. of cycles per second Hz : 0.5 Durata impulsului:1s; Perioada de repaus :1s
 Presiunea laterala/ Side pressure: -0,8 bar
 Caracteristici de fluaj/ Features: Conform inregistrarilor date de echipament

Nr.proba	Inaltimea initiala a probei ,mm	Deformatia permanenta ,µm/m		Viteza de deformatie ,µm/m/ciclu
		la 5000 cicluri	la 10000 cicluri	
1	80.6	8720	9028	0.1
2	80.1	9305	9613	0.1
3	80.2	8913	9221	0.1
MEDIA	80.3	8979	9287	0.1

Incarcarea la compresiune ciclica



Sistemul de management al calitatii respecta prevederile din SR EN ISO/IEC 17025:2018/The quality management system complies with the requirements of SR EN ISO / IEC 17025: 2018.

Rezultatele prezentate in raport se refera numai la proba supusa incercarii / Results presented in this report are referring only to the tested samples

Declaram pe proprie raspundere ca incercarile nu s-au efectuat sub presiune de nici o forma./ We declare on our responsibility that tests were made under no kind of pressure

Prezentul raport de incercare continand 1 pagina s-a elaborat in 2 exemplare / This test report has 1 page it was issued in 2 copies

Pentru efectuarea incercarilor s-au utilizat numai metode standardizate / Only standard methods were used for tests performance

Raportul nu poate fi multiplicat sau utilizat in alte scopuri fara aprobarea emitentului. / This report can not be multiplied or used for some other purposes without the issuer's approval

Ser laborator/Laboratory supervisor
 Nume si Prenume/Name and surname: ing. Georgiana ADRIANA DEFTA

Manager calitate /Quality manager
 Dr.ing.Mirela TANASESCU

Sef Profil D/Profile D Supervisor
 ing. Sofica DRAGHICI

Executant/ Performer
 lab.Neculai ZAHARIA





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 Laborator grad 1 autorizatie ISC 2742/30.05.2013 reînnoita la data de 30.05.2017+ Anexa 2/11.01.2019
 Laborator autorizat AFER seria AL nr.482/2014 R2

RAPORT DE INCERCARE/ TEST REPORT

ANEXA 2 LA RAPORTUL DE INCERCARE/ANNEX 2 TO THE TEST REPORT

Nr./Data 90.5/11.05.2021

Beneficiar /Beneficiary/Adresa/Address: DRUMURI CRIULENI S.A/ Str. Stepelor, nr.5, MD 4801, Criuleni, Republica Moldova

Contract/Contract: / Additional/Additional: / Comanda/Order:41.12/01.03.2021

Document insotire probe nr./ data :PV nr. / Document attending the samples no. / date: 62.5/30.03.2021

Tipul materialului/Material type : BA22.4 leg 70/100

Produsorul/Producer: -

Furnizori/Supplier: -

Locul prelevarii/ Sampling place: -

Lucrarea/ Work place: -

Esantionare/Sampling: -

Prelevare/ Assay: -

Data prelevarii/Assay date : -

Data esantionare/ Sampling date: -

Data primirii materialelor /Date of receipt of the materials: 30.03.2021

Aspect proba/ Sample shape: conform/conformable

Indicativ proba/Laboratory test indicative : 62.15

Locul executarii /Place of testing: laborator / laboratory

Tipul incercarii/ Type of testing: x teren / site

Temperatura ambienta/ Room temperature:24°C

Probe nr/ No.of samples: 4

Data prepararii/ Mixing date: 21.04.2021

Data efectuării incercării/ Date of attempt: 07.05.2021

Determinarea rigiditatii* Incercarea prin aplicarea unei intinderi indirect pe epruvete trapezoidale sau cilindrice/ Determination of stiffness/Testing by applying an indirect tension to cylindrical specimen/ Two-point bending test on trapezoidal specimens la 20°C ,124 ms, conform SR EN12697-26:2018-ANEXA-A/ANEXA C

Referinta proba Sample reference	Diametru proba Sample diameter (mm)	Grosime proba Thickness sample(mm)	Temp. de test /Test temperature(oC)	Indicele Poisson The Poisson Index	Fora verticala /Vertical force(kN)	Efort orizontal /Horizontal effort(kPa)	Timp crestere /Growth time (ms)	Deformatia orizontala /Horizontal deformation (um)	Zona factor /Factor area	Modul rigiditate /The rigidity mode(MPa)
pr1	100	65	20	0.35	2.2	220.5	121	2.4	0.82	5772
pr1	100	65	20	0.35	2.2	219.7	121	2.4	0.83	5483
pr 2	100	65	20	0.35	2.3	220.3	121	2.4	0.8	5628
pr 2	100	65	20	0.35	2.3	221	121	2.4	0.82	5575
pr3	100	65	20	0.35	2.2	222.3	121	2.4	0.81	5586
pr3	100	65	20	0.35	2.3	222.5	121	2.5	0.81	5537
pr 4	100	65	20	0.35	2.3	220.1	121	2.5	0.8	5595
pr 4	100	65	20	0.35	2.3	221.3	121	2.4	0.83	5555
										5575
										5588 MPa

Modul de rigiditate

cod formular F D AQT 23,ed.4/rev. 1/2020 pag 1/2



Sistemul de management al calitatii respecta prevederile din SR EN ISO/IEC 17025:2018/The quality management system complies with the requirements of SR EN ISO / IEC 17025: 2018.

Rezultatele prezentate in raport se refera numai la proba supusa incercarii / Results presented in this report are referring only to the tested samples

Declaram pe proprie raspundere ca incercarile nu s-au efectuat sub presiune de nici o forma/We declare on our responsibility that the tests were made under no kind of pressure.

Prezentul raport de incercare continand 1 pagina s-a elaborat in 2 exemplare / This test report has 1 pages it was issued in 2 copies.

Pentru efectuarea incercarilor s-au utilizat numai metode standardizate / Only standard methods were used for tests performance

Raportul nu poate fi multiplicat sau utilizat in alte scopuri fara aprobarea emitentului / This report can not be multiplied or used for some other purposes without the issuer's approval

Sef laborator/Laboratory supervisor
ing. Georgiana Adriana DEFIAN
S. LABORATOR GRAD I
* Autorizate ISC 2142/30.05.2017
Reautorizat 2017

Manager calitate /Quality manager
Dr.ing.Mirela LANAŞESCU



Sef Profil D/Prin D Supervisor
ing.Sofica DRAGHICI
cod formular F D AQT 23,ed.4/rev. 1/2020 pag 2/2

Executant/ Performer
lab.Neculai ZAHARIA

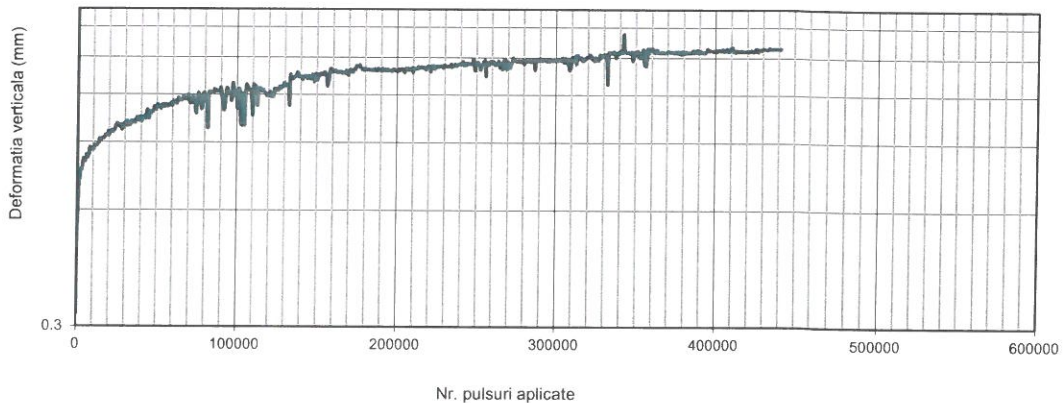


LABORATOR DE ANALIZE SI INCERCARI IN CONSTRUCTII SC AQ TESTING BT SRL
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 Laborator autorizat AFER seria AL nr.482/2014 R2

RAPORT DE INCERCARE/ TEST REPORT
ANEXA 3 LA RAPORTUL DE INCERCARE/ANNEX 3 TO THE TEST REPORT

Nr./Data 90.5/11.05.2021

Beneficiar /Beneficiary/Adresa/Address: DRUMURI CRIULENI S.A/ Str. Stepelor, nr.5, MD 4801, Criuleni, Republica Moldova
 Contract/Contract:/ Additional/Additional:/ Comanda/Order:41.12/01.03.2021
 Document inotire probe nr./ data ;PV nr. / Document attending the samples no. / date; 62.5/30.03.2021
 Tipul materialului/Material type : BA22.4 leg 70/100
 Furnizor/Supplier: _____ Producator/Producer: _____
 Locul prelevarii/ Sampling place: _____
 Lucrarea/ Work place: _____
 Esantionare/ Sampling: _____
 Prelevare/ Assay: _____
 Data prelevarii/Assay date : _____
 Data esantionare/ Sampling date: _____
 Data primirii materialelor /Date of receipt of the materials: 30.03.2021
 Aspect proba/ Sample shape: conform/conformable neconform / inadequate
 Indicativ proba/Laboratory test indicative : 62.15
 Locul executarii /Place of testing: laborator / laboratory teren / site _____
 Tipul incercarii/ Type of testing: /Resistance to fatigue, cubic sample applicant to stretch indirect evidence: Minimum number of cycles to failure at 15 °
 conform SR EN 12697-24:2018-ANEXA A/ANEXA E
 Temperatura ambienta/ Room temperature:24°C
 Data prepararii/ Mixing date: 21.04.2021
 Data efectuării incercării/ Date of attempt: 08-11.05.2021
 Diametru proba/ Sample diameter (mm): 100
 Grosime proba/ Height of sample (mm): 51
 Presiune incercare/ Applied pressure (kPa) : 250
 Deformatia vert maxima/ Maximum vertical deformation : 1.589
 Numar cicluri la fisurare/ No. of cycles till breaking: 441500



Sistemul de management al calitatii respecta prevederile din SR EN ISO/IEC 17025:2018/The quality management system complies with the requirements of SR EN ISO / IEC 17025: 2018.

Rezultatele prezentate in raport se refera numai la proba supusa incercarii / Results presented in this report are referring only to the tested samples
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Prezentul raport de incercare continand 1 pagina s-a elaborat in 2 exemplare / This test report has 1 pages and it was issued in 2 copies

Pentru efectuarea incercarilor s-au utilizat numai metode standardizate / Only standard methods were used for tests performance

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Nume si prenume/Name and surname

Sef laborator / Laboratory supervisor
 ing. Georgiana Adriana DEFTA
 * Autorizatie DEFTA 2/30.05.2013
 Reautorizat 2017
 BUCURESTI - ROMANIA

Manager calitate /Quality manager

Dr.ing.Mirela TANASESCU

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Executant/ Performer

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