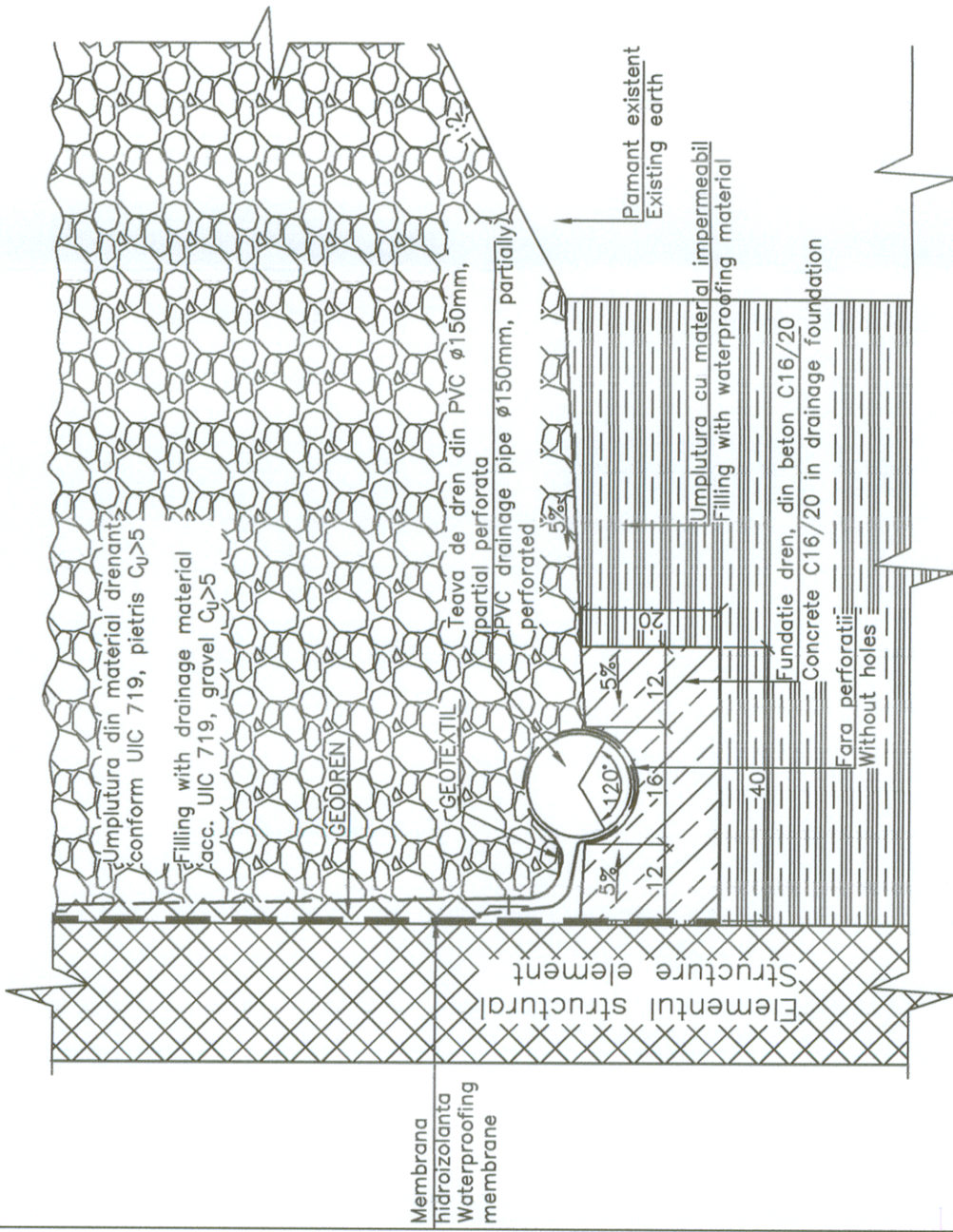


SISTEM DE DRENARE A APELOR DIN SPATELE PODTELOR
SYSTEM FOR DRAINAGE THE WATER BEHIND THE CULVERTS
Sc.1:10



MEMBRANA PENTRU HIDROIZOLATII:

Conditii de utilizare:

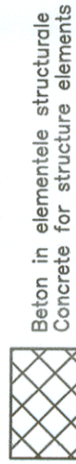
- grosimea minima a membranei 4mm;
- realizata pe baza de bitum aditivat;
- sa prezinte strat din granule minerale care sa asigure aderenta betonului de protectie;
- sa prezinte insertie de geotextil netesut din polistiren cu greutate min. 200g/mp;
- sa se aplice cu fiacara in aderenta totala la suport.

Caracteristici fizico-mecanice:

- rezistenta la tractiune - longitudinal min. 180N/5cm;
- rezistenta la rupere - transversal min. 120N/5cm;
- alungire la rupere - longitudinal min. 30%;
- alungire la rupere - transversal min. 30%;
- rezistenta la poansonare statica - min. 25kg(L4);
- flexibilitate la temperaturi scazute (dorn cu diametrul 20mm) - fara fisuri la -20°C;
- aderenta la suport - min. 0.53 MPa.

LEGENDA BETOANELOR:

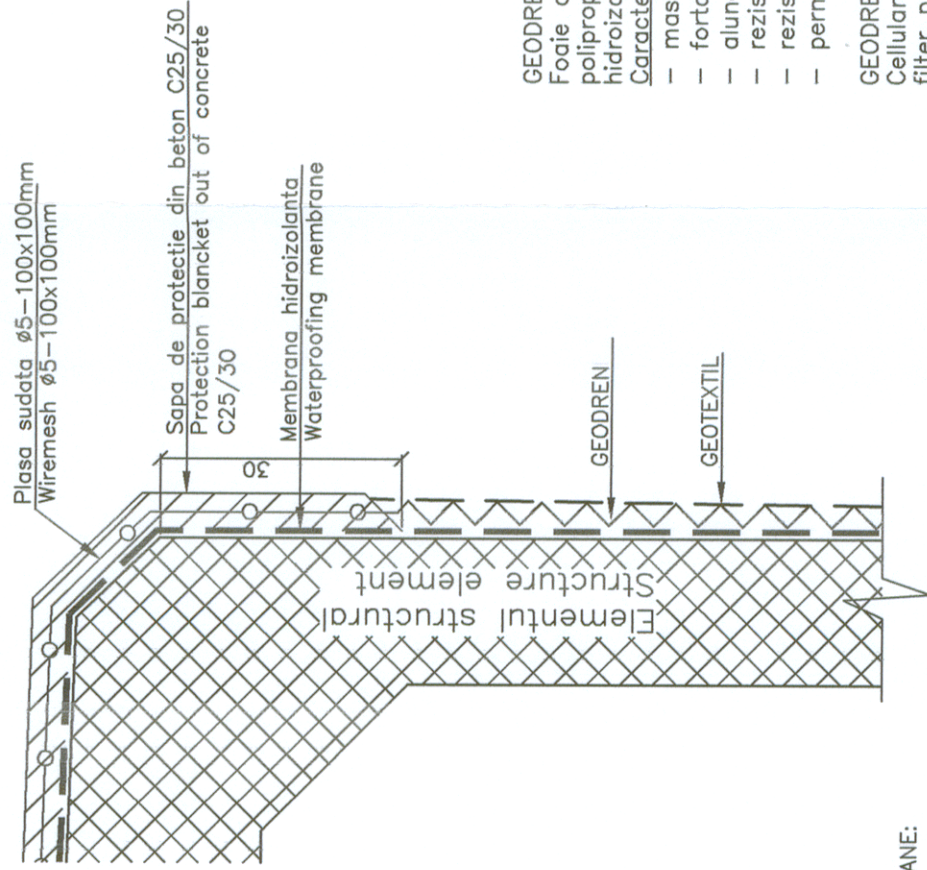
CONCRETE LIST:



Beton de panta si protectie a hidroizolatiei C 25/30, expunere XC4+XF1 (RO), Cl 0.2, agregate D_{max} 16, densitate D 2.5, consistenta S3
Slope concrete and protection of waterproofing C 25/30, exposure XC4+XF1 (RO), Cl 0.2, aggregates D/max 16, density D 2.5, consistency S3

Beton simplu in fundatie dren C 16/20, expunere XO (RO), Cl 0.2, agregate D_{max} 32, densitate D 2.5, consistenta S2
Plain concrete in drain foundations C 16/20, exposure XO (RO), Cl 0.2, aggregates D/max 32, density D 2.5, consistency S2

RACORDAREA SAPEI DE PROTECTIE SI
FIXAREA GEODRENULUI
PROTECTION BLANKET FILLET AND
GEODREN CONECTION
Sc.1:10



WATERPROOFING MEMBRANE:

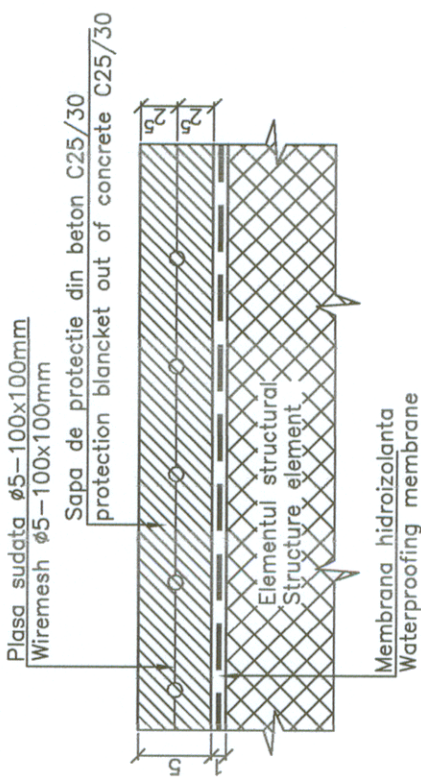
Using conditions:

- the minimum membrane thickness 4mm;
- additive bitumen membrane;
- it shall have a layer with mineral granule which should provide the protection concrete adherence;
- it shall have non-woven geo-textile insertion of polyester with minimum weight 200g/mp;
- it shall be applied by flame gluing in total adherence with the support.

Physical-mechanical properties:

- tensile strength - longitudinal min. 180N/5cm;
- tensile strength - transversal min. 120N/5cm;
- elongation ultimate - longitudinal min. 30%;
- elongation ultimate - transversal min. 30%;
- static punching resistance - min. 25kg(L4);
- low temperature flexibility (mandrel with 20mm diameter) - without cracks at -20°C;
- support adherence - min. 0.53 MPa.

DETALIU STRAT DE PROTECTIE A HIDROIZOLATIEI
WATERPROOFING PROTECTION BLANKET DETAIL
Sc.1:5



GEODREN:

Foie de polipropilena cu sectiune alveolara, imbracata la fata superioara cu un netesut din polipropilena cu rol de geotextil filtrant, iar fata inferioara se lipeste de membrana hidroizolanta.

Caracteristici fizico-mecanice:

- masa unitara - 0,61kg/mp;
- forta de rupere la tractiune (T/L) - >880x760N/5cm
- alungire la rupere (T/L) - >45x40%
- rezistenta la perforare statica - >15daN
- rezistenta la compresiune - 450kN/mp
- permeabilitate la apa - 0,062m/s

GEODREN:

Cellular polypropylene sheet, protected at the upper side by a polypropylene non-woven for filter purpose and glued at the lower side by waterproofing membrane.

Physical-mechanical properties:

- unitary weight - 0,61kg/mp;
- ultimate tensile strength (T/L) - >880x760N/5cm
- breaking tension (T/L) - >45x40%
- static penetration resistance - >15daN
- compression resistance - 450kN/mp
- water permeability - 0,062m/s

B					
A					
BENEFICIAR/BENEFICIARY:		AUTORITATEA DE IMPLEMENTARE/IMPLEMENTUNG AUTHORITY		AUTORITATEA CONTRACTANTA/ CONTRACTING AUTHORITY	
ROMANIAN RAILWAY NATIONAL COMPANY		Ministerul Transporturilor Ministry of Transports		CFCU Ministerul Economiei si Finantelor Oficiu de Plati si Contractare Phare Ministry of Economy and Finances Phare Payments & Contracting Office	
Ing. Simona NICULESCU		Scara / Scale:		PORTOFOLIUL DE PROIECTE PHARE CES 2005 / PHARE CES 2005 PROJECTS PORTFOLIO	
Ing. Nicoleta FLORIAN		1:10		LOT 11	
Ing. Stelian VARA-OROS		1:5		Asistenta tehnica pentru pregatirea unor lucrari de reabilitare pentru tuneluri si poduri de cale ferata	
		Data / Date:		Technical assistance for preparing rehabilitation works required by railway tunnels and bridges	
		05.2009		Denumirea desen / Drawing Title:	
				Scursula RCF Railway district ASI, Line of Railway line 511 Darmanest-Domneasra	
				Cod desen / Nr. / No:	
				DETALIU DREN SI HIDROIZOLATIE/WATERPROOFING AND DRAINAGE	
				Drawing Code	
				PT 20	
				05	