

Road Package

PP-4-1-IP F005

Quality package for road documents

Serial No.: <i>(serie nr)</i>		Executed by: <i>(utført af)</i>		Folder No.: <i>(Perm Nr.)</i>	
Chainage: <i>(Område)</i>		Section/ Lot: <i>(seksjon)</i>		Type:	
				Left/Venstre <input type="checkbox"/>	Main Road <input type="checkbox"/>
				Right/høyre <input type="checkbox"/>	Side Road <input type="checkbox"/>

Description of the Works / Arbeidsbeskrivelse.

Collection of documents to finalise road package

Layer finalised:

Subbase 20-64 mm ASG 16 (20) AG _____ AB _____
 Drainage/conduits _____ Furniture Other _____

Package includes/inkl i pakken

Always

Control between each layer/ Kontroll mellom hvert lag. YES NO N/A Final doc
 Survey/ landmåler YES NO N/A Final doc
General
 Internal handover protocol/ Intern overleverings protokoll YES NO N/A Final doc
 Cleaning and removal of material prior to filling/ Rens og fjerning av material før fylling YES NO N/A Final doc
 Deep blasting/ Dyp sprengning YES NO N/A Final doc
 Rock slope/ Skjæring YES NO N/A Final doc
 Wedge out/ Utkiling YES NO N/A Final doc
 Special geotechnical solution/ Spesielle geotekniske løsninger YES NO N/A Final doc

Checklist

Pipeline/ Rør YES NO N/A Final doc
 Acceptance check/ Mottaks kontroll YES NO N/A Final doc
 Filling/ Fylling YES NO N/A Final doc
 Compaction/ Kompaktering YES NO N/A Final doc
 Placing report/ Legge rapport YES NO N/A Final doc
 Other/ Andet _____ YES NO N/A Final doc

Laboratory

Overview inspection plan/Oversight IP YES NO N/A Final doc
 Test results/ Test resultater YES NO N/A Final doc
 Other/ Andet _____ YES NO N/A Final doc

Deviation reports/ Avviks melding.

Documentation outstanding/ Manglende dokumentasjon: NR: _____
 Other Deviations/ Andre avvik: NR: _____

Date for completion of paperwork/ Dato for ferdigstilling av papir arbeide:

Remarks

Some of the documents are filled out with wrong chainage, since they are filled out on site – these are not corrected in office, but they cover the area documented in the survey and/or laboratory data.

Signature/ underskrift:

Inspection Protocol/Quality Control

Serial No.: (serie nr)	Filled in office	Executed by: (utført af)		Folder No.: (Perm Nr.)	Filled in office
Chainage: (Område)	Filled by section Eng	Section/ Lot: (seksjon)		Type: Left/Venstre <input type="checkbox"/> Right/høyre <input type="checkbox"/>	Main Road <input type="checkbox"/> (hoved vei) Side Road <input type="checkbox"/> (side vei)

Description of the Works / arbeids beskrivelse.

Hold point! Approval that the next layer can be placed/ **Holde punkt!** Godkjent innen neste lag legges.

Material (only one layer per sheet)/ Materiale (kun et lag per ark):

20-64 mm ASG _____ AG _____ AB _____
 Other _____

Visual control/Visuell kontroll

Layer compacted/Laget kompakteret Yes NO
 Material accepted/Material akseptert Yes NO
 Layer is clean and ready for refill/laget er ren og klar til ny lag. Yes NO

If No; Work must be stopped and site engineer contacted/ Hvis nej; Arbeidet skal stoppes of byggeleder kontaktes

Any test taken on site/ Test taket Yes NO

If yes when: After _____ tons at _____ o'clock/ Hvis ja; efter hvor mange tons of hvad tid.

Survey/ Landmåling

Single points accepted/ Enkelpunkt akseptert Yes NO
 Average accepted/ Gjennomsnitt akseptert Yes NO
 Evenness accepted/Jevnhet akseptert Yes NO

If No; Work must be stopped and site engineer contacted/ Hvis nej; Arbeidet skal stoppes of byggeleder kontaktes

Date for work/ Dato:

Attachments/ Vedlegg

Picture; of accepted layer/ billed (if needed)
 Deviation report/ Avvik (if needed)
 Remarks/ Bemerkning (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Proseskode

Method Statement No. HB 018 chapter 5 and 6

Signature/ underskrift:

Handover Protocol		
Between CJV and <input type="checkbox"/> Client <input type="checkbox"/> Internal <input type="checkbox"/> Subcontractor : _____		
Date: _____ Department (<i>set cross</i>) <input type="checkbox"/> Bridge & Structure <input type="checkbox"/> Tunnel <input type="checkbox"/> Road <input type="checkbox"/> E&M	<i>Fill out as applicable:</i> Construction name: _____ Construction number: _____ Contractual number: _____ Chainage/Tube: _____	
Subject:		
Description:		
References:		
Prehand over inspection: Prehand over site inspection conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes:</i> Date of inspection(s): _____		
Hand over inspection: Hand over site inspection conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No Handover inspection protocol to be attached.		
Attached Documentation		
Remarks/Exceptions		
Defect/punch items to be cleared:		
Handed over from: Name: Signature:	Handed over to and accepted by: Name: Signature:	

CLEANING AND REMOVAL OF MATERIAL BEFORE FILLING

Rensk og fjerning av material før fylling

E18-F-KD-107

Inspection Protocol/Quality Control

Serial No.: (serie nr)	Filled in office	Executed by: (utført af)		Folder No.: (Perm Nr.)	Filled in office
Chainage: (Område)	Filled by section Eng	Section/ Lot: (seksjon)		Type: Left/Venstre <input type="checkbox"/> Right/høyre <input type="checkbox"/>	Main Road <input type="checkbox"/> (hoved vei) Side Road <input type="checkbox"/> (side vei)

Deskription of the Works / Arbeidsbeskrivelse.

Type of cleaning/rensk:

Cutting of three and bushes/ Hogst av tre	<input type="checkbox"/>	Compaction/kompaksjon	<input type="checkbox"/>
Removal of rock/ fjerning av stein	<input type="checkbox"/>	Underwater mass exchange/undervanns masse bytting	<input type="checkbox"/>
Removal of Humus/ fjerning av humus	<input type="checkbox"/>	Mass exchange/ masse bytting	<input type="checkbox"/>
Removal of peat/ fjerning av torv	<input type="checkbox"/>	Rock Cleaning prior to Blasting/Rensk før sprenging	<input type="checkbox"/>

Requirements/Krav:

No bushes left	<input type="checkbox"/> YES	<input type="checkbox"/> NO
No tree stubs/roots closer to the profile height than 3 m left	<input type="checkbox"/> YES	<input type="checkbox"/> NO
For layer thickness between 20-60 cm, no rock larger than the layer left	<input type="checkbox"/> YES	<input type="checkbox"/> NO
For filling < 3,0 m or incline ≥ 1:6 is all organic material removed	<input type="checkbox"/> YES	<input type="checkbox"/> NO
For filling < 0.3 m or incline ≥ 1:6 is all peat removed	<input type="checkbox"/> YES	<input type="checkbox"/> NO
For mass exchange, has rock bottom been reached	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Date for work/ Dato:

Start date/ Start dato:

End date/ slutt dato:

Attachments

Pictures, during work and pictures that work is approved	<input type="checkbox"/> (Every time)
Drivers note/ Fører seddel	<input type="checkbox"/> (if needed)
Survey/Oppmåling; mass exchange in area is done to rock bottom	<input type="checkbox"/> (if needed)
Deviation Report/Avviks melding	<input type="checkbox"/> (if needed)
Test of material quality Test av ateriale kvalitet	<input type="checkbox"/> (when needed)
Remarks/ Bemærkninger	<input type="checkbox"/> (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Proseskode

Method Statement No. HB 018 chapter 231 and 252

Signature/ underskrift:

Request for approval

Serial No.: <i>(serie nr)</i>	Filled in office	Taken by: <i>(utført af)</i>		Folder No.: <i>(Perm Nr.)</i>	Filled in office
Chainage:		Section/ Lot: <i>(Abschnitt/ Los)</i>		DATE:	
Side	Right <input type="checkbox"/> Left <input type="checkbox"/>				

Suggestion for rock protection/ Forslag til fjellsikring.	Signature geologist:
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Type of protection/ type av sikring:

Bolting Type: _____ Quantity: _____ Length _____ m Diameter: _____ mm
(KS500)

Quantity: _____ Length _____ m Diameter: _____ mm

Quantity: _____ Length _____ m Diameter: _____ mm

Galvanized Galvanized and powder coated

Steel Wire between bolts Quantity: _____ Length _____ m Diameter: _____ mm

Wire mesh Type: _____ Area: _____ m² Diameter: _____ mm

Grouting Type: _____ Area: _____ m²

Attachments

Report/drawing (incl. requirement to geometry (165, 1.13.1)) (Every time by geologist)

Pictures (If needed)

Work order, NR _____ (when needed)

Delivery notes (Every time)

Material specification (Every time)

Description of technical execution (Every time)

Comments for landscape adaptation (when needed)

Remarks (If needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode

Method Statement No. NS 3420 G2 HB 165 Chapter 1 HB 231 chapter 2.5 & 2.6

Preformed by CJV, Signature	Preformed by Subcontractor, Signature
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Inspection Protocol/Quality Control

Serial No.: <i>(serie nr)</i>	Filled in office	Executed by: <i>(utført af)</i>		Folder No.: <i>(Perm Nr.)</i>	Filled in office
Chainage: <i>(Område)</i>	Filled by section Eng	Section/ Lot: <i>(seksjon)</i>		Type: Left/Venstre <input type="checkbox"/> Right/høyre <input type="checkbox"/>	Main Road <input type="checkbox"/> <i>(hoved vei)</i> Side Road <input type="checkbox"/> <i>(side vej)</i>

Description of the Works / arbeids beskrivelse.
Wedge out

Type/type:

Enrockment/Steinfylling <input type="checkbox"/>	Drainage/dren <input type="checkbox"/>
Rock out/ Fjellskjæring <input type="checkbox"/>	Conduits/ledninger <input type="checkbox"/>
Earth out/ jordskjæring <input type="checkbox"/>	Pavement widening/bredde utvidelse <input type="checkbox"/>
Ditch/ grøft <input type="checkbox"/>	Uncompacted material/løsmasser <input type="checkbox"/>

Length of wedge/ Utkilings lengde

10 meter (g/s road)
 15 meter (remaining)
 25 meter (Side road)
 30 meter (Main road)
 Other _____

Regulations/ Forskrift

The frost free depth is achieved / Frost fri dybde nåett Yes NO

Date for work/ Dato: _____

Start date/ Start dato: _____
End date/ slutt dato: _____

Attachments/ Vedlegg

Picture; of filling/billeder av fylling (if needed)

Drawing /Tegning (if needed)

Deviation report/ avvik melding (if needed)

Remarks/ Bemærkninger (if needed)

GENERAL PROCEDURE No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode

GP "Wedge out" HB 018 chapter 225, 256, 257, 423 and 512.43

Signature/ underskrift:

Pipeline Report

E18-H-KD-101

Inspection Protocol/Quality Control

Serial No.: <i>(serie nr)</i>	Filled in office	Executed by: <i>(utført af)</i>	Folder No.: <i>(Perm Nr.)</i>	Filled in office
Chainage: <i>(Område)</i>	Filled by section Eng	Section/ Lot: <i>(seksjon)</i>	Type: Left/Venstre <input type="checkbox"/> Right/høyre <input type="checkbox"/>	Main Road <input type="checkbox"/> Side Road <input type="checkbox"/>

Description of the Works / Arbeidsbeskrivelse.

Overall information/ general information:
 Drawing number/ Tegnings nummer: _____
 From - to manhole nr & type/Fra - til kum nr. & type: _____

Ditch/grøft:
 Type: Soil/Jord Bedrock/Fjell
 Stabilitet: Acceptable/akseptabel Not Acceptable/ikke akseptabel
 Measurement/stikking: Height/Højde: _____ Wide/bredde: _____ By surveyor/Av stikker

Backfilling/Tilbakefylling:
 Fibermesh/Fiberduk: Type: Classification _____ Quantity/mengde: _____
 Foundation/Fundament Type: _____ Thickness/Tykkelse: _____
 Embedding/omfylling Type: _____ Thickness/Tykkelse: _____
 Backfilling/gjenfylling Type: _____ Thickness/Tykkelse: _____

Manhole/Kumme:
 Measurement/stikking: Height/Højde: _____ Diameter: _____ By surveyor/Av stikker
 Installed according to drawing/installert ihht. Tegning YES NO If No Why/Reason/explanation

Pipes and Conduits/rør:
 Type: _____ ID-nr: _____
 Measurement/stikking: Length/Lengde _____ Decline/Fall: _____ Diameter: _____ By surveyor/Av stikker
 Installed according to drawing/installert ihht. Tegning YES NO If No Why/Reason/explanation

Various part of pipes/Diverse rørdeler:
 Type: _____ Dim: _____ Number: _____
 Type: _____ Dim: _____ Number: _____

Date for work/ Dato: _____ **End date/ slutt dato:** _____

Attachments
 Pictures, during work and pictures that work is approved (if needed)
 Pipes in manholes/Rør i kummer (E18-H-KD-107) (every time)
 Compaction and Filling/Kompaktering og fylling; (E18-H-KD-109) (when needed)
 Deviation Report/Avviks melding (if needed)
 Pressure - & Leakage test/Trykk test (E18-AD-KD-106 A/B) (when needed)
 Remarks/ Bemærkninger (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode
 Method Statement No. HB 018 chapter 4

Signature/ underskrift:

Checklist for Pipes in Manholes

E18-H-KD-107

Inspection Protocol/Quality Control

Serial No.: (serie nr)	Filled in office	Executed by: (utført af)		Folder No.: (Perm Nr.)	Filled in office
Chainage: (Område)	Filled by section Eng	Section/ Lot: (seksjon)		Type: Left/Venstre <input type="checkbox"/> Right/høyre <input type="checkbox"/>	Main Road <input type="checkbox"/> Side Road <input type="checkbox"/>

Description of the Works / Arbeidsbeskrivelse.	TO BE WITH RELEVANT PIPELINE REPORT
Overall information/ general information:	
Manhole nr & type/Kum nr. & type: _____	
General/generelt:	
Installation in accordance with drawing /installert ihht. Tegning	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Foreign objects removed from the pipe /Fremmedlegemer fjernet fra røret	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Pipe placed free from other pipes/røret ligger fritt fra andre rør	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Pipe placed on gravel/Røret ligger på grus	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
No contact with sharp objects/ingen kontakt med skarpe gjenstande rør	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Bolts	
Material and installation in accordance with drawing/Materiale og installasjon ihht. Tegning	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
When the bolts are cut the end is galvanized/ Når bolter er kuttet er enderne galvaniseres.	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
The bolts is divided equally/ boltene er jevnt fordelt	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Valves/Ventiler:	
Installation in accordance with drawing /installert ihht. Tegning	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Marked according to pipe specification/Tagget ihht. Rør spesifikasjoner	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Thread/Gjengede:	
Thread seal is used/Gjengtetning er brukt	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Anchoring/Forankring	
Anchoring is installed/ Forankring er installert	<input type="checkbox"/> YES <input type="checkbox"/> NO If No Why?
Date for work/ Dato:	End date/ slutt dato:

Attachments	
Pictures, during work and pictures that work is approved	<input type="checkbox"/> (if needed)
Deviation Report/Avviks melding	<input type="checkbox"/> (if needed)
Remarks/ Bemærkninger	<input type="checkbox"/> (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode	
Method Statement No.	HB 018 chapter 4 E18-H-KD-101

Signature/ underskrift:

MOTTAKSKONTROLL AV RØR OG KUMMER AV PLAST
ACCEPTANCE CHECK OF PIPES AND MANHOLES OF PLASTIC

Leverandør Supplier			
Type rør/kum/kumdel pipe/manhole			
Kvantum Quantity:		Mottaksdato: Receiving date:	
Bestillingsreferanse Order reference			
Lagerområde Storage area			

Kontrollpunkt Control list	Status / Kommentar State/ Comments
Kvantum/ Quantity	
Merking av rør/deler Marking of pipe/part	
Deformasjon Deformation	
Muffe og pakning Socket and gasket	
Spissende Tips	
Sprekker i gods Joints in goods	
Håndteringsskader damage due to handling	
Innpakning og beskyttelse Packing and protection	
Underlag og mellomlag for lagring i høyden Foundation and intermediate layer for storage in the height	
Beskyttelse mot utglidning og forflytning Protection towards sliding and movements	

Generell kommentar/General notes _____

Vareleverandøren/ Supplier

CJV-E18

Kopi: Vareleverandør, anleggsleder

Inspection Protocol/Quality Control

Serial No.: (serie nr)	Filled in office	Executed by: (utført af)		Folder No.: (Perm Nr.)	Filled in office
Chainage: (Område)	Filled by section Eng	Section/ Lot: (seksjon)		Type:	Main Road/(hoved vei) <input type="checkbox"/>
				Left/Venstre <input type="checkbox"/>	Side Road/ (side vei) <input type="checkbox"/>
				Right/høyre <input type="checkbox"/>	

Description of the Works / arbeids beskrivelse.

TO BE WITH RELEVANT PIPELINE REPORT

Material/ Materiale:

Gravell/grus 8-16 mm Blasted rock/Sprengstein Other/annet _____

Compaction/ komprimering

Equipment/utstyr: _____ Weight/vekt: _____ kg
 Layer/lag: _____ Passes/passeringer: _____
 Layer/lag: _____ Passes/passeringer: _____
 Layer/lag: _____ Passes/passeringer: _____
 Layer/lag: _____ Passes/passeringer: _____
 Layer/lag: _____ Passes/passeringer: _____

Regulations/ Forskrift

Light compaction equipment is used on side of the cables YES NO N/A
 For Concrete, steel and cast iron pipes: DN≤ 1000 is 100 kg and DN>1000 is 200 kg. For plastic or corrugated pipes 60 kg
 Used rock size is 2/3 of layer thickness but not larger than 300 mm YES NO N/A
 The filling height above pipe is min. 0.5 m unless other is stated on pipe/dwg. YES NO N/A
 Minimum Thickness of filling above top pipe is acc to the table below YES NO N/A

Min. thickness above top pipe before compaction (m)	Compaction equipment	Min. thickness above top pipe before compaction (m)	Compaction equipment
0,2	Vibrating plate 50-200 kg	0,60 ¹⁾	Vibrating roller 16-25 kN/m
0,3	Mechanical stamper < 70 kg	1,20 ¹⁾	Vibrating roller 26-40 kN/m
	Vibrating plate 201-500kg	1,80 ¹⁾	Vibrating roller 41-55 kN/m
0,401)	Vibrating roller 10-15 kN/m	2,40 ¹⁾	Vibrating roller > 55 kN/m
0,5	Vibrating plate > 500 kg		

1)For concrete pipes saying that cover of 4 metres or more is permissible, the thickness of layer before the compaction must be as shown in the chart. For pipes saying that the permissible cover is less than 4 metres, the thickness of layer must be increased with one level (one line below in the chart)

Date for work/ Dato:

Start date/ Start dato:

End date/ slutt dato:

Attachments/ Vedlegg

Picture; of work/billeder av arbeide (if needed)
 Test of material quality/ Test av materiale kvalitet (According to Control plan)
 Deviation report/ avvik melding (if needed)
 Remarks/ Bemærkninger (if needed)

Method Statement No., Quality Control Plan, Contratt, Norsk Standard, Prosesskode

Method Statement No. HB 018 chapter 4 NS3420 H 15.2:1

Signature/ underskrift:

Inspection Protocol/Quality Control

Serial No.: <i>(serie nr)</i>	Filled in office	Executed by: <i>(utført af)</i>		Folder No.: <i>(Perm Nr.)</i>	Filled in office
Chainage: <i>(Område)</i>	Filled by section Eng	Section/ Lot: <i>(seksjon)</i>		Type: Left/Venstre <input type="checkbox"/> Right/høyre <input type="checkbox"/>	Main Road <input type="checkbox"/> <i>(hoved vei)</i> Side Road <input type="checkbox"/> <i>(side vei)</i>

Description of the Works / arbeids beskrivelse.

Material/ Materiale:
 Sprengt stein 20-64 mm Sand/Silt Other/Annet: _____

Construction/konstruksjon
 Subbase Fill Ditch Other/Andet: _____

Equipment/utstyr
 Bomag Hamm Caterpillar NR _____

Chainage/Område	Layer/lag	Passes/ Passeringer	Date/Dato	Signature/ underskrift

Attachments/ Vedlegg

Pictures/ Billeder (if needed)

Test of compaction/ test av kompaksjon (According to Control plan)

Deviation report/ avvik melding (if needed)

Remarks/ Bemærkninger (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode

Method Statement No. HB 018 Chapter 4 and 5

Signature/ underskrift:

Test of conduits

E18-H-KD-XX

Inspection Protocol/Quality Control

Serial No.: (serie nr)	Filled in office	Executed by: (utført af)		Folder No.: (Perm Nr.)	Filled in office
Chainage: (Område)	Filled by section Eng	Section/ Lot: (seksjon)		Type:	
				Left/Venstre <input type="checkbox"/>	Main Road <input type="checkbox"/>
				Right/høyre <input type="checkbox"/>	Side Road <input type="checkbox"/>

Description of the Works / Arbeidsbeskrivelse.
Deformation test of conduits

Overall information/ general information:
 Drawing number/ Tegnings nummer: _____
 From - to manhole nr & type/Fra - til kum nr. & type: _____
 Type of conduit: conduit Protective conduit/varerør
 Dimension of pipe /Størrelse: 40 * 50* 75* 110* 125* Other _____

Requirements/krav:
 Ditch shall be back filled and compacted/Rørgreften er gjenfylt og komprimert YES NO
 Cleaned before start up/ blåst før start YES NO
 Relative Deformation < 10%/deformasjonen < 10% YES NO
 Additional single point deformation < 1/3 of relative deformation/
 Punktdeformasjon < 1/3 av relative deformation YES NO

Date for work/ Dato: _____ **End date/ slutt dato:** _____

Attachments

Pictures, during work and pictures that work is approved (if needed)

Deviation Report/Avviks melding (if needed)

Remarks/ Bemærkninger (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode
 General procedure Strain/deformation test of cable conduits HB 018 chapter 4.4

Signature/ underskrift:

Test Report Manholes

E18-AD-KD-106

Inspection Protocol/Quality Control

Serial No.: (serie nr)	Filled in office	Executed by: (utført af)		Folder No.: (Perm Nr.)	Filled in office
Chainage: (Område)	Filled by section Eng	Section/ Lot: (seksjon)		Type: Left/Venstre <input type="checkbox"/> Main Road <input type="checkbox"/> Right/høyre <input type="checkbox"/> Side Road <input type="checkbox"/>	

Description of the Works / Arbeidsbeskrivelse.

Overall information/ general information:

Manhole number/ Kum nummer: _____

Type of manhole/ Kum type: _____

Diameter of manhole/Kum diameter: _____

Test of/Test av:

Firm gasket/fast pakning

Embedded gasket/Innstøpt pakning

Sliding gasket/glide pakning

Tyton/Tyton

Pigging/Cleaning/rengjøring: OK If Not Why/Reason/explanation

Tightness test with water (NS3551, density class I)/Tetthetsprøving med vann (NS3551, tetthetsklasse I):

The pipe was under normal water pressure before test started in/ Ledningen hadde stått under normalt vanntrykk i: _____ hours

Allowed pressure drop/decrease/ Tillatt trykkfall/synk: _____

Read pressure drop/decrease/ Avlest trykkfall/synk: _____

Temperature: _____

Tightness test with air (NS3550)/tetthetsprøving med luft (NS3550):

T-demand/T-krav: _____ min

T-measured/T-målt: _____ min

Allowed pressure drop/decrease/ Tillatt trykkfall/synk: _____

Read pressure drop/decrease/ Avlest trykkfall/synk: _____

Date for work/ Dato:	Test date/ test dato:
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Attachments

Pictures, during work and pictures that work is approved (if needed)

Remarks/ Bemærkninger (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode

Method Statement No. HB 018 chapter 4 NS 3550 NS 3551

Signature/ underskrift:

SAMPLE FOR TEST OF MATERIAL DATA - SUBBASE

E18-AD-KD-123

Inspection Protocol/Quality Control

Serial No.: <i>(serie nr)</i>	Filled in office	Executed by: <i>(utført af)</i>		Folder No.: <i>(Perm Nr.)</i>	Filled in office
Chainage: <i>(Område)</i>	Filled by section Eng	Section/ Lot: <i>(seksjon)</i>		Type:	Main Road <input type="checkbox"/> <i>(hoved vei)</i> Side Road <input type="checkbox"/> <i>(side vei)</i>

Description of the Works // arbeids beskrivelse.
Information of sample taken for test of material data for blasted rock or gravel - SUBBASE

Material/ Materiale:
Blasted rock Sprengt stein Pukk Gravel Other: _____ Andet: _____

Road type/vei type:
H1 H2
S1 S2
A1 A2
Other _____

ADT
< 300 0-1.500 300-1.500
1500-5000 5.000 – 15.000 > 15.000
Other _____

Test wished to be taken/ Ønsket test
Los Angeles Value/ LA-verdi Water Sensitiveness/ vann ømfintighet
Grain size distribution/ Korn kurve (not for blasted rock) Frost susceptible/ Tele farer
Maximum rock size/ max. stein størrelse Other/annen _____

Regulations/ Forskrift
Test taken from road/vej Test taken from crushing plant/ knuse verk Other/annen _____

Date for Sample/ dato for test: _____ **Sample date:** _____

Attachments/ Vedlegg
Test (Every time)
Pictures/bille (if needed)
Deviation/ avvik (if needed)
Remarks/Bemærkninger (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode
Method Statement No. HB 018 chapter 5.20 and appendix 3 HB 014

Signature/ underskrift:

Feeler Gauge Testing

PP-1-1-GP-013-F001

Inspection Protocol/Quality Control

Serial No.: (serie nr)	Filled in office	Executed by: (utført af)		Folder No.: (Perm Nr.)	Filled in office
Chainage: (Område)	Filled by section Eng	Section/ Lot: (seksjon)		Type: Left/Venstre <input type="checkbox"/> Right/høyre <input type="checkbox"/>	Main Road <input type="checkbox"/> Side Road <input type="checkbox"/>

Description of the Works / Arbeidsbeskrivelse.
Deformation test of pipes and conduits with a diameter ≤ 200

Overall information/ general information:
Drawing number/ Tegnings nummer: _____
From - to manhole nr & type/Fra - til kum nr. & type: _____
Type: conduit Protective conduit/varerør Pipe
Dimension of pipe /Størrelse: 40 * _____ 50* _____ 75* _____ 110* _____ 125* _____ Other _____

Requirements/krav:
Ditch back filled and compacted/Røgrøften er gjenfylt og komprimert YES NO
Cleaned/ blåst YES NO
Conduits: Relative Deformation < 10%/deformasjonen < 10% YES NO
Pipes: Relative Deformation < 5%/deformasjonen < 5% YES NO
Additional single point deformation < 1/3 of relative deformation/
Punktdeformasjon < 1/3 av relative deformation YES NO

Date for work/ Dato: _____ **End date/ slutt dato:** _____

Attachments
Pictures, during work and pictures that work is approved (if needed)
Deviation Report/Avviks melding (if needed)
Remarks/ Bemærkninger (if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode
PP-1-1-GP-013 Deformation test of pipes and conduits HB 018 chapter 4.4

Signature/ underskrift:

TV-Inspection

PP-1-1-GP-013-F002

Inspection Protocol/Quality Control

Serial No.: (serie nr)	Filled in office	Executed by: (utført af)	Folder No.: (Perm Nr.)	Filled in office
Chainage: (Område)	Filled by section Eng	Section/ Lot: (seksjon)	Type: Left/Venstre <input type="checkbox"/> Right/høyre <input type="checkbox"/>	Main Road <input type="checkbox"/> Side Road <input type="checkbox"/>

Description of the Works / Arbeidsbeskrivelse.

Deformation test of pipes and conduits with a diameter > 200

Overall information/ general information:

Drawing number/ Tegnings nummer: _____

From - to manhole nr & type/Fra - til kum nr. & type: _____

Type: conduit Protective conduit/varerør Pipe

Sketch/sketsj

Requirements/krav:

Ditch back filled and compacted/Rørgrøften er gjenfylt og komprimert

YES NO

Cleaned/ blåst

YES NO

Conduits: Relative Deformation < 10%/deformasjonen < 10%

YES NO

Pipes: Relative Deformation < 5%/deformasjonen < 5%

YES NO

Single point deformation < 1/3 of relative deformation/Punktdeformasjon < 1/3 av relative deformation

YES NO

Test Results/Resultater

Number	Diameter [mm]	Material	Length [m]	Caliber	Damage Chainage & type	Defomration Chainage and quantity	Remarks
001							
002							
003							
004							
005							
006							
007							
008							
009							
010							
011							
012							
013							
014							

Date for work/ Dato:

End date/ slutt dato:

Attachments

TV Protocol

(Always)

Deviation Report/Avviks melding

(if needed)

Remarks/ Bemærkninger

(if needed)

Method Statement No., Quality Control Plan, Technical Specifications, Norsk Standard, Prosesskode

PP-1-1-GP-013 HB 018 chapter 4.4

Signature/ underskrift:



section no.:	area of cross section	A:	290,0 cm ²				
constr. project:	grain density for calculation of	P _{pr} :	2,65 g/cm ³				
performed by:		n _a :	g/cm ³				
date:							
no. of assey							
date of withdrawl:							
tapping point:	profile:						
	position towards axis:						
	dephth:						
soil type:	according to DIN 18196						
	according to DIN 4022						
VOLUME							
reset befor soil excavation	L ₀ [cm]						
check after soil excavation	L ₁ [cm]						
volume	V=(L ₁ - L ₀) *A [cm ³]	0	0	0	0		
MASS							
clammy assey + box	m + mb [g]						
box	mb [g]						
clmmy assey	m [g]	0	0	0	0		
density	p=m / V [g/cm ³]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
DETERMINATION OF WATER CONTENT							
clammy assey + box	m + mb [g]						
dry assey + box	md + mb [g]						
box	mb [g]						
water	(m+mb)-(md+mb)=mw [g]	0,0	0,0	0,0	0,0		
dry assey	(md+mb)-mb=md [g]	0,0	0,0	0,0	0,0		
water content	w= mw/md [M.-%]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
DRY DENSITY							
dry density	p _d = p/(1+ w/100) [g/cm ³]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
oversized grain	>31,5 mm [M.-%]	0,0	0,0	0,0	0,0		
COMPACTION							
100% proctor density	p _{Pr} [g/cm ³]						
korr. Proctor density	p _{pr} [g/cm ³]						
air voids unit	n _a [vol-%]						
degree of density	actual [1]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
degree of density	set point [1]						
demand fullfilled ?							
no. of proctor:							
comments:							



section no.:		Anlage
costruction project:		
performed by: Mr. Neef	grain density for calclation of	n_a : 2,72 g/cm ³
date:		

no. of assey			
--------------	--	--	--

date of withdrawl:	.11.2007		
--------------------	----------	--	--

tapping point:			
profile:			
position towards axis:			
depth:			

soil type :	according to DIN 18196		
-------------	------------------------	--	--

MASS

clammy assey + cylinder	$m + mb$	[g]			
cylinder	mb	[g]			
clammy assey	m	[g]	0	0	0
volume		[cm ³]			
density	$p = m / V$	[g/cm ³]	#DIV/0!	#DIV/0!	#DIV/0!

DETERMINATION OF WATER CONTENT

clammy assey + box	$m + mb$	[g]			
dry assey + box	$md + mb$	[g]			
box	mb	[g]			
water	$(m+mb)-(md+mb)=mw$	[g]	0	0	0
dry assey	$(md+mb)-mb=md$	[g]	0	0	0
water content	$w = mw/md$	[M.-%]	#DIV/0!	#DIV/0!	#DIV/0!

DRY DENSITY

dry density	$p_d = p / (1 + w/100)$	[g/cm ³]	#DIV/0!	#DIV/0!	#DIV/0!
oversized grain	>31,5 mm	[M.-%]			

COMPACTION

100% proctor density	p_{Pr}	[g/cm ³]			
Korr. Proctor density	p'_{Pr}	[g/cm ³]			
air voids unit n_a [Vol.-%]	Porenanteil n [1]		#DIV/0!	#DIV/0!	#DIV/0!
degree of compression	D_{pr} actual	[%]	#DIV/0!	#DIV/0!	#DIV/0!
	D_{pr} set point	[%]			
demand fulfilled?					
no. of proctor					
comments :					



Control No.:	density of bentonit rho E:	g/cm ³
Construction project: E18 Grimstad - Kristiansand	grain density for calculation of	Korr. r _{Pr} 2,8 g/cm ³
performed by:	na:	g/cm ³
date	ringvolume dia: 20,25 cm	m _E : 0,0 g

No. of assay	ben150.2				
--------------	----------	--	--	--	--

date of withdrawal:					
---------------------	--	--	--	--	--

tapping point:	ASG 20				
profile					
position towards axis					
depht	ASG 20				

soil type:	supplier:	GU (G,s*,u) + bitumen 180/200 / mixed plant Gaupemyr
------------	-----------	--

VOLUME

box + Bentonit (before)	m1	[g]			
box + Bentonit (after)	m2	[g]			
ringvolume	mE	[g]			
Volume	$V=(m1-m2-mE)/rho_E$	[cm ³]	#DIV/0!		

MASS

clammy assay + box	m + mb	[g]			
box	mb	[g]			
clammy assay	m	[g]			
density	$p= m / V$	[g/cm ³]	#DIV/0!		

DETERMINATION OF WATER CONTENT

			<20 mm	> 20 mm
clammy assay + box	m + mb	[g]		
dry assay + box	md + mb	[g]		
box	mb	[g]		
Water	$(m+mb)-(md+mb)=mw$	[g]		
dry assay	$(md+mb)-mb=md$	[g]		
water content	$w= mw/md$	[M.-%]	#DIV/0!	#DIV/0!
korr. water content	$w'= mw/md$	[M.-%]	#DIV/0!	

DRY DENSITY

dry density	$p_d = p/(1+ w / 100)$	[g/cm ³]	#DIV/0!		
oversized grain	>31,5 mm	[M.-%]	#DIV/0!		

COMPACTION

100% proctor density	rPr	[g/cm ³]			
korr. proctor density	(Korr_Pr.)	[g/cm ³]	#DIV/0!		
air voids unit	n_a	[vol-%]			
degree of density D _{p,r}	actual	[%]	#DIV/0!		
degree of density	set point	[%]	98,0		
demand fulfilled?					
no. of proctor:					

comments:



determination for the dynamic deformations module after TP BF-StB, Teil B 8.3
 test apparatus: easy drop weight ZFG-02; burden plates caliber 300 mm

construction project: E18 Grimstad - Kristiansand

station:

section no.:

offset material: sand

soil type:

performed by:

weather:

date:	no.: of assey	tapping point: comments:	settlement single value [mm]	settlement mean value [mm]	Evd [MN/m ²]

requirement: Evd >= 45 MN/m²

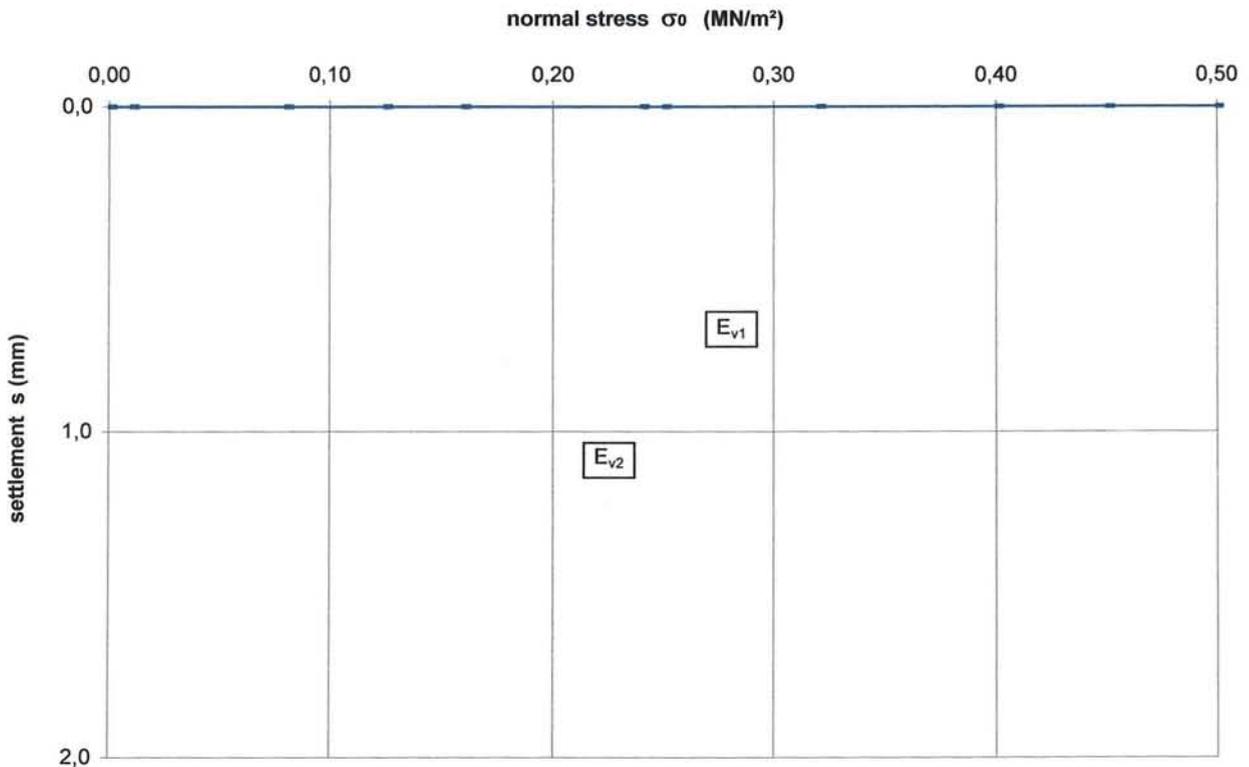


project : E18 Grimstad - Kristiansand
 section no.: 0 test no.: 0
 date: 00.01.1900 00:00
 measuring point: 0
 soil typ: 0
 depth: 0
 performed by: 0
 Meßarmverhältnis : 1 : 2
 weather: 0

settlement measuring

	first load							load relieving		
normal stress (MN/m ²)	0,08	0,16	0,24	0,32	0,4	0,45	0,5	0,25	0,125	0
settlement dial gauge (mm)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
settlement plate (mm)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	second load									
normal stress (MN/m ²)	0,08	0,16	0,24	0,32	0,4	0,45				
settlement dial gauge (mm)	0,00	0,00	0,00	0,00	0,00	0,00				
settlement plate (mm)	0,00	0,00	0,00	0,00	0,00	0,00				

pressure-measuring curve:



findings:

σ_{max} (MN/m ²)	a 1 (mm/MN/m ²)	a 2 (mm/MN/m ²)	$E_v = 1,5 * r / (a_1 + a_2 * \sigma_{max})$	
0,5	0,00	0	$E_{v1} = \#DIV/0!$ MN/m ²	$E_{v2} / E_{v1} = #####$
0,5	0,000	0	$E_{v2} = \#DIV/0!$ MN/m ²	set value: $\leq 3,5$
			$E_{v2} \text{ Soll: } \geq 120$ MN/m ²	

comments:



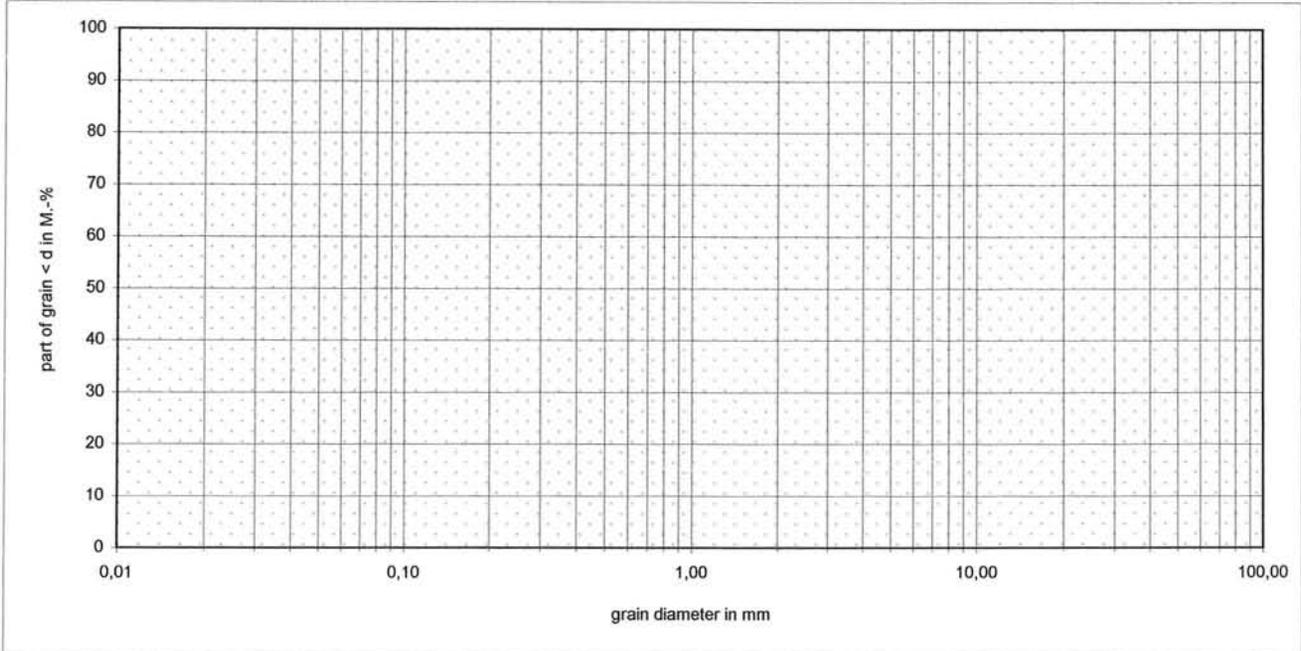
section no.:	area of cross section		A:	292,5 cm ²
constr. project: E18 Grimstad - Kristiansand	grain density for calculation of		P _{pr} ':	2,7 g/cm ³
performed by:			na:	g/cm ³
date:				
no. of assey	den		den	
date of withdrawl:				
tapping point:	noise barrier			
profile:				
position towards axis:				
depht:				
soil type: according to DIN 18196				
according to DIN 4022				
VOLUME				
reset befor soil excavation	L ₀ [cm]			
check after soil excavation	L ₁ [cm]			
volume	V=(L ₁ - L ₀) * A [cm ³]			
MASS				
clammy assey + box	m + mb [g]			
box	mb [g]			
clmmy assey	m [g]			
density	ρ=m / V [g/cm ³]			
DETERMINATION OF WATER CONTENT				
		>20 mm	>20 mm	>20 mm
clammy assey + box	m + mb [g]			
dry assey + box	md + mb [g]			
box	mb [g]			
water	(m+mb)-(md+mb)=mw [g]			
dry assey	(md+mb)-mb=md [g]			
water content	w= mw/md [M.-%]			
corr. water content	w' [M.-%]	#DIV/0!	#DIV/0!	#DIV/0!
DRY DENSITY				
dry density	ρ _d = p/(1+ w/100) [g/cm ³]	#DIV/0!	#DIV/0!	#DIV/0!
oversized grain	>20 mm [M.-%]	#DIV/0!	#DIV/0!	#DIV/0!
COMPACTION				
100% proctor density	p _{Pr} [g/cm ³]			
corr. Proctor density	p' _{Pr} [g/cm ³]	#DIV/0!	#DIV/0!	#DIV/0!
air voids unit	n _a [vol-%]			
degree of density Dpr	actual [%]	#DIV/0!	#DIV/0!	#DIV/0!
requirement of density	[%]	97,0	97,0	97,0
demand fulfilled ?		yes	yes	yes
no. of proctor:				
comments:				



construction project: E18 Grimstad - Kristiansand
 construction stage: 0/2mm for Asphalt
 withdrawal at the
 assay at the:

section no.:
 appearance:
 by:
 by:

graining line



partical size distribution of grain

overall anhydrous mass of the examined assay:	0								g					
grain size mm	0,063	0,125	0,25	0,5	1,0	2,0	4,0	8,0	11,2	16,0	22,4	31,5		
transit (d) in M.-%														
assay 04														
assay														
grain size at (mm)	d ₁₀	d ₅₀			d ₆₀		d ₁₀	d ₃₀			d ₆₀			
assay number	2													
tapping point:														
depth														
soil group n. DIN 18196														
soil type at DIN 4022														
mineral nutrients														
frost-susceptible class														
grain size interval	percentage of grain M.-%													
fine grain <0,063 mm M.-%														
sand 0,063 - 2,0 mm M.-%														
split 2,0 - 4 mm M.-%														
uniformity grade U														
coving rate C _c														
water content < 32 mm M.-%														
comments:														

wighted sample zur Naßsiegung m_d :

Einwaage des Siebanteils m_b :

dish: deviation

grain size mm	palimpsest	palimpsest	through pass	through pass %
	g	%	%	
				100,0
				100,0
				100,0
				100,0
22,4		#DIV/0!	#DIV/0!	#DIV/0!
16		#DIV/0!	#DIV/0!	#DIV/0!
11,2		#DIV/0!	#DIV/0!	#DIV/0!
8		#DIV/0!	#DIV/0!	#DIV/0!
4		#DIV/0!	#DIV/0!	#DIV/0!
2		#DIV/0!	#DIV/0!	#DIV/0!
1		#DIV/0!	#DIV/0!	#DIV/0!
0,5		#DIV/0!	#DIV/0!	#DIV/0!
0,25		#DIV/0!	#DIV/0!	#DIV/0!
0,125		#DIV/0!	#DIV/0!	#DIV/0!
0,063		#DIV/0!	#DIV/0!	#DIV/0!
< 0,063		#DIV/0!		
sum <22,4mm		#DIV/0!		
loss		#DIV/0!		

overall mass	
mass clammy (g)	
mass dry (g)	
mass water (g)	
water content (1)	

oversize grain > 16,0 mm	
mass clammy \bar{U}_t [g]	
mass clammy \bar{U}_t [g]	

percentage of grain < 16,0 mm	
mass clammy	
mass dry	

water content w_n Anteil < 16,0 mm	
$m_t + m_b$ (g)	
$m_t + m_b$ (g)	
m_b (g)	
m_w (g)	
m_t (g)	
$w_n < 32mm$ (1)	

initial weight for Naßsiegung m_d :

inital weight des Siebanteils m_b :

dish: deviation

grain size mm	palimpsest	palimpsest	through pass	through pass %
	g	%	%	
				100,0
				100,0
				100,0
				100,0
31,5		#DIV/0!	#DIV/0!	#DIV/0!
22,4		#DIV/0!	#DIV/0!	#DIV/0!
20		#DIV/0!	#DIV/0!	#DIV/0!
16		#DIV/0!	#DIV/0!	#DIV/0!
11,2		#DIV/0!	#DIV/0!	#DIV/0!
8		#DIV/0!	#DIV/0!	#DIV/0!
5		#DIV/0!	#DIV/0!	#DIV/0!
2		#DIV/0!	#DIV/0!	#DIV/0!
0,71		#DIV/0!	#DIV/0!	#DIV/0!
0,25		#DIV/0!	#DIV/0!	#DIV/0!
0,063		#DIV/0!	#DIV/0!	#DIV/0!
< 0,063	0	#DIV/0!		
sum <32mm	0,0	#DIV/0!		
loss	0,0	#DIV/0!		

overall mass	
mass clammy (g)	#DIV/0!
mass dry (g)	#DIV/0!
mass water (g)	#DIV/0!
water content (1)	#DIV/0!

oversize grain > 31,5 mm	
mass clammy \bar{U}_t [g]	0
mass clammy \bar{U}_t [g]	0

percentage of grain < 32 mm	
mass clammy	0
mass dry	#DIV/0!

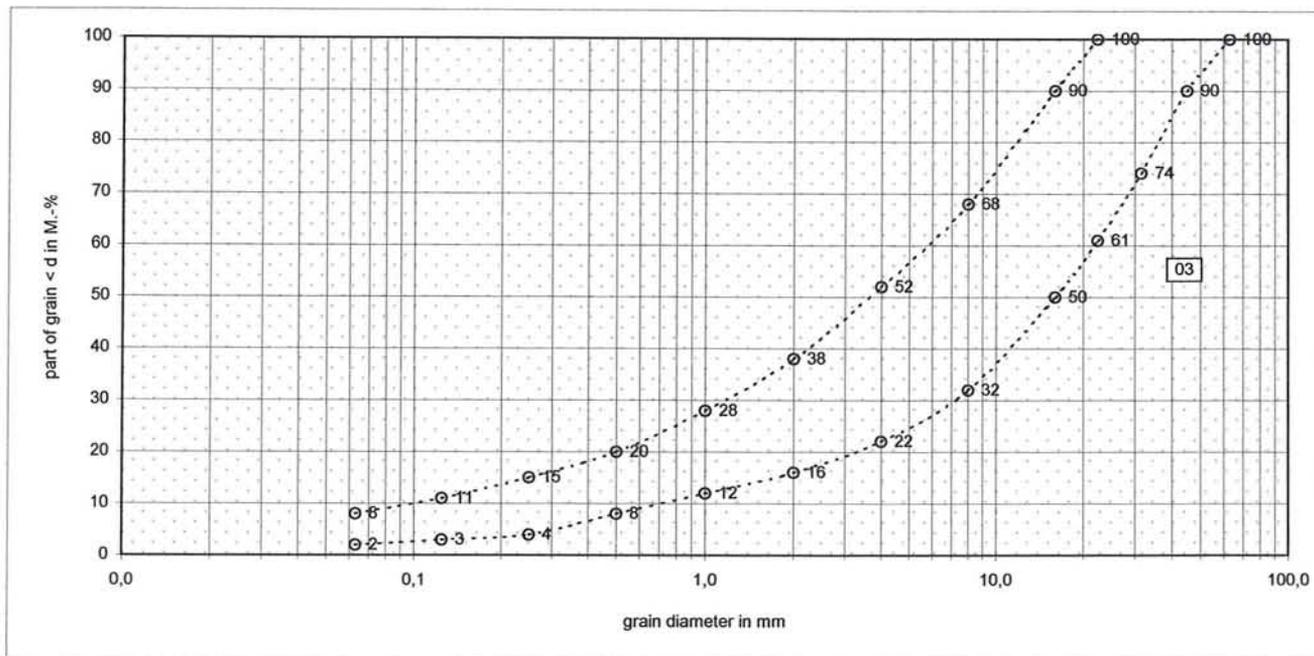
water content w_n Anteil < 32 mm	
$m_t + m_b$ (g)	
$m_t + m_b$ (g)	
m_b (g)	
m_w (g)	0
m_t (g)	0
$w_n < 32mm$ (1)	#DIV/0!



construction project: E18 Grimstad - Kristiansand
construction stage:
withdrawal at the
assay at the:

section no.:
appearance:
by:
by:

graining line



partial size distribution of grain

overall anhydrous mass of the examined assay:	0 g													
grain size mm	0,063	0,25	0,71	2,0	5,0	8,0	11,2	16,0	22,4	31,5	45	56	63	100
transit (d) in M.-%														
assay gsr 03														
assay														
grain size at (mm)	d ₁₀ 0,17		d ₅₀ 9,3			d ₆₀ 20,42		d ₁₀		d ₅₀			d ₆₀	
assay number														
tapping point:														
depth														
soil group n. DIN 18196														
soil type at DIN 4022														
mineral nutrients	mixture of gravel, split and crushed material. 0/64mm													
frost-susceptible class														
grain size interval	percentage of grain M.-%													
fine grain <0,063 mm	M.-%													
Sand 0,063 - 2,0 mm	M.-%													
split 2,0 - 32 mm	M.-%													
gravel > 32 mm	M.-%													
uniformity grade U														
coving rate C _c														
water content < 32 mm	M.-%													

0,063	0,125	0,25	0,5	1	2	4	8	16	22,4	31,5	45	63
8	11	15	20	28	38	52	68	90	100			100
2	3	4	8	12	16	22	32	50	61	74	90	100

wighted sample zur Naßsiegung m_d :
 Einwaage des Siebanteils m_e :
 dish: deviation

grain size mm	palimpsest	palimpsest	through pass	through pass %
	g	%	%	
				100,0
				100,0
63		#DIV/0!		#DIV/0!
56,0		#DIV/0!		#DIV/0!
45		#DIV/0!		#DIV/0!
31,5		#DIV/0!	#DIV/0!	#DIV/0!
22,4		#DIV/0!	#DIV/0!	#DIV/0!
16		#DIV/0!	#DIV/0!	#DIV/0!
11,2		#DIV/0!	#DIV/0!	#DIV/0!
8		#DIV/0!	#DIV/0!	#DIV/0!
5		#DIV/0!	#DIV/0!	#DIV/0!
2		#DIV/0!	#DIV/0!	#DIV/0!
0,71		#DIV/0!	#DIV/0!	#DIV/0!
0,25		#DIV/0!	#DIV/0!	#DIV/0!
0,063		#DIV/0!	#DIV/0!	#DIV/0!
< 0,063		#DIV/0!		
sum <22,4mm		#DIV/0!		
loss		#DIV/0!		

overall mass	
mass clammy (g)	
mass dry (g)	
mass water (g)	
water content (1)	

oversize grain > 31,5 mm	
mass clammy \bar{U}_f [g]	
mass clammy \bar{U}_t [g]	

percentage of grain < 32 mm	
mass clammy	
mass dry	

water content w_n Anteil < 32 mm	
$m_f + m_b$ (g)	
$m_t + m_b$ (g)	
m_b (g)	
m_w (g)	
m_t (g)	
$w_n < 32mm$ (1)	

initial weight for Naßsiegung m_d :
 initial weight des Siebanteils m_e :
 dish: deviation

grain size mm	palimpsest	palimpsest	through pass	through pass %
	g	%	%	
				100,0
				100,0
				100,0
				100,0
63				100,0
31,5		#DIV/0!	#DIV/0!	#DIV/0!
22,4		#DIV/0!	#DIV/0!	#DIV/0!
16		#DIV/0!	#DIV/0!	#DIV/0!
11,2		#DIV/0!	#DIV/0!	#DIV/0!
8		#DIV/0!	#DIV/0!	#DIV/0!
5		#DIV/0!	#DIV/0!	#DIV/0!
2		#DIV/0!	#DIV/0!	#DIV/0!
0,71		#DIV/0!	#DIV/0!	#DIV/0!
0,25		#DIV/0!	#DIV/0!	#DIV/0!
0,063		#DIV/0!	#DIV/0!	#DIV/0!
< 0,063		#DIV/0!		
sum <32mm		#DIV/0!		
loss	0,0	#DIV/0!		

overall mass	
mass clammy (g)	
mass dry (g)	#DIV/0!
mass water (g)	#DIV/0!
water content (1)	#DIV/0!

oversize grain > 31,5 mm	
mass clammy \bar{U}_f [g]	
mass clammy \bar{U}_t [g]	

percentage of grain < 32 mm	
mass clammy	0
mass dry	#DIV/0!

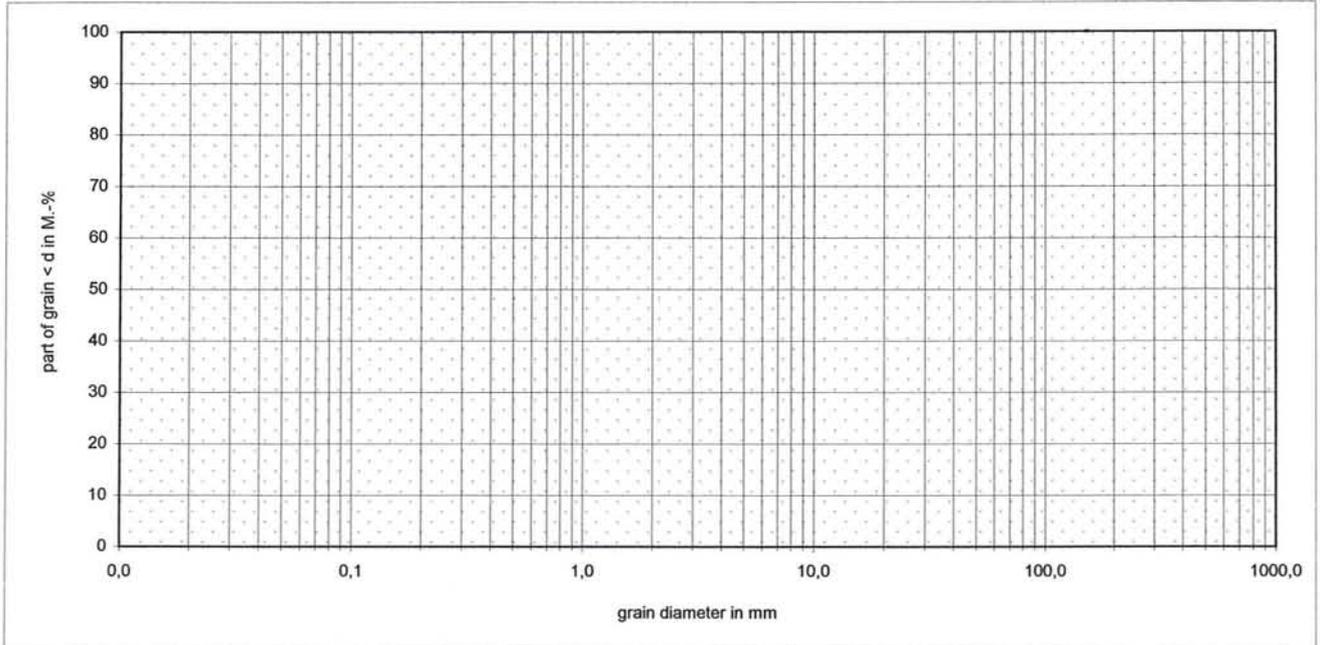
water content w_n Anteil < 32 mm	
$m_f + m_b$ (g)	
$m_t + m_b$ (g)	
m_b (g)	
m_w (g)	0
m_t (g)	0
$w_n < 32mm$ (1)	#DIV/0!



construction project: E18 Grimstad - Kristiansand
 construction stage: subbase;
 withdrawal at the
 assay at the:

section no.:
 appearance:
 by:
 by:

graining line



partical size distribution of grain

overall anhydrous mass of the examined assay:							0		g		g						
grain size mm	0,063	0,125	0,25	0,5	1,0	2,0	4,0	8,0	16,0	22,4	31,5	45	63	90	120		
transit (d) in M.-%																	
assay ssb 148																	
assay																	
grain size at (mm)	d ₁₀ 2,7			d ₃₀ 22			d ₆₀ 43		d ₁₀	d ₃₀			d ₆₀				
assay number																	
tapping point:																	
depth																	
soil group n. DIN 18196																	
soil type at DIN 4022																	
mineral nutrients	gravel 0/120																
frost-susceptible class																	
grain size interval	percentage of grain M.-%																
fine grain <0,063 mm	M.-%																
Sand 0,063 - 2,0 mm	M.-%																
split 2,0 - 32 mm	M.-%																
gravel 32 - 63 mm	M.-%																
stones > 63 mm	M.-%																
uniformity grade U																	
coving rate C _c																	
water	M.-%																
comments:																	

wighted sample zur Naßsiegung m_d :
 initial weight des Siebanteils m_a :
 dish: deviation

grain size mm	palimpsest	palimpsest	through pass	through pass %
	g	%	%	
				100,0
120		#DIV/0!		#DIV/0!
90		#DIV/0!		#DIV/0!
63		#DIV/0!		#DIV/0!
45,0		#DIV/0!		#DIV/0!
31,5		#DIV/0!		#DIV/0!
22,4		#DIV/0!	#DIV/0!	#DIV/0!
16		#DIV/0!	#DIV/0!	#DIV/0!
8		#DIV/0!	#DIV/0!	#DIV/0!
4		#DIV/0!	#DIV/0!	#DIV/0!
2		#DIV/0!	#DIV/0!	#DIV/0!
1		#DIV/0!	#DIV/0!	#DIV/0!
0,5		#DIV/0!	#DIV/0!	#DIV/0!
0,25		#DIV/0!	#DIV/0!	#DIV/0!
0,125		#DIV/0!	#DIV/0!	#DIV/0!
0,063		#DIV/0!	#DIV/0!	#DIV/0!
< 0,063		#DIV/0!		
sum <22,4mm		#DIV/0!		
loss		#DIV/0!		

overall mass	
mass clammy (g)	
mass dry (g)	
mass water (g)	
water content (1)	

oversize grain > 22,4 mm	
mass clammy \bar{U}_r [g]	
mass clammy \bar{U}_t [g]	

percentage of grain < 20,0 mm	
mass clammy	
mass dry	

water content w_n Anteil < 22,4 mm	
$m_r + m_b$ (g)	
$m_t + m_b$ (g)	
m_b (g)	
m_w (g)	
m_t (g)	
$w_n < 32mm$ (1)	

initial weight for Naßsiegung m_d :
 initial weight des Siebanteils m_a :
 dish: deviation

grain size mm	palimpsest	palimpsest	through pass	through pass %
	g	%	%	
				100,0
				100,0
				100,0
				100,0
63				100,0
31,5		#DIV/0!	#DIV/0!	#DIV/0!
22,4		#DIV/0!	#DIV/0!	#DIV/0!
16		#DIV/0!	#DIV/0!	#DIV/0!
11,2		#DIV/0!	#DIV/0!	#DIV/0!
8		#DIV/0!	#DIV/0!	#DIV/0!
5		#DIV/0!	#DIV/0!	#DIV/0!
2		#DIV/0!	#DIV/0!	#DIV/0!
0,71		#DIV/0!	#DIV/0!	#DIV/0!
0,25		#DIV/0!	#DIV/0!	#DIV/0!
0,063		#DIV/0!	#DIV/0!	#DIV/0!
< 0,063		#DIV/0!		
sum <32mm		#DIV/0!		
loss	0,0	#DIV/0!		

overall mass	
mass clammy (g)	
mass dry (g)	#DIV/0!
mass water (g)	#DIV/0!
water content (1)	#DIV/0!

oversize grain > 31,5 mm	
mass clammy \bar{U}_r [g]	
mass clammy \bar{U}_t [g]	

percentage of grain < 32 mm	
mass clammy	0
mass dry	#DIV/0!

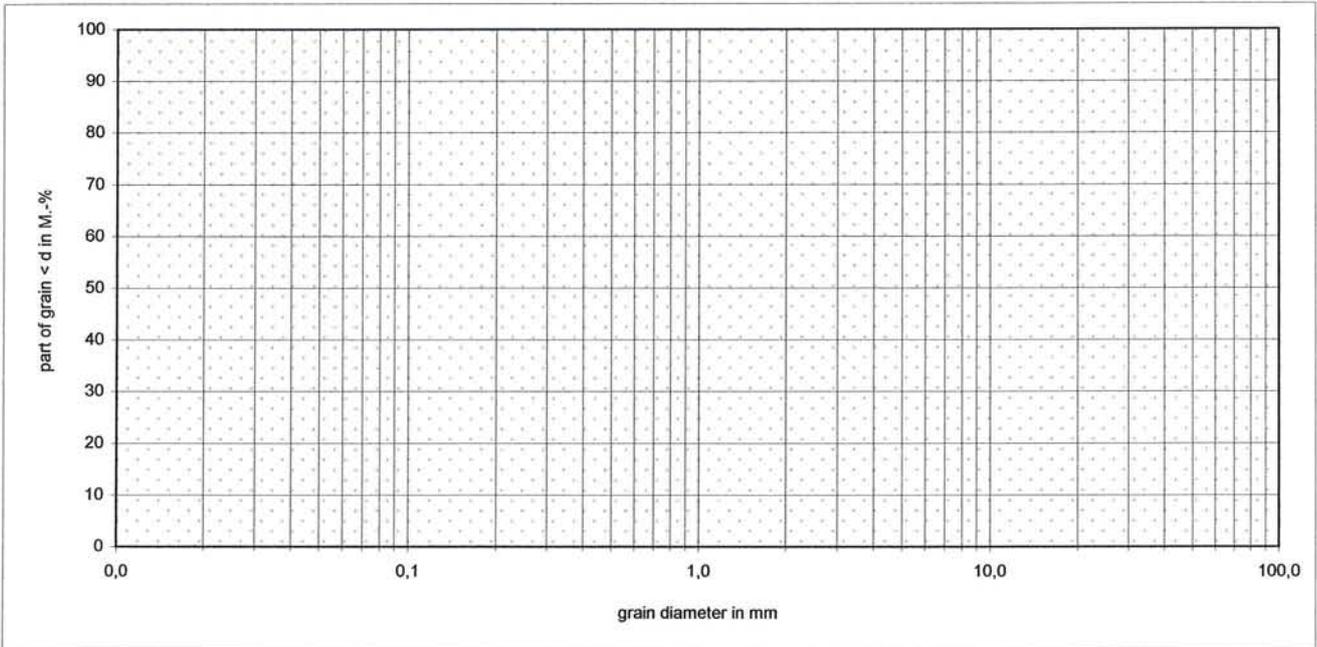
water content w_n Anteil < 32 mm	
$m_r + m_b$ (g)	
$m_t + m_b$ (g)	
m_b (g)	
m_w (g)	0
m_t (g)	0
$w_n < 32mm$ (1)	#DIV/0!



construction project: E18 Grimstad - Kristiansand
 construction stage:
 withdrawal at the
 assay at the:

section no.:
 appearance:
 by:
 by:

graining line



partical size distribution of grain

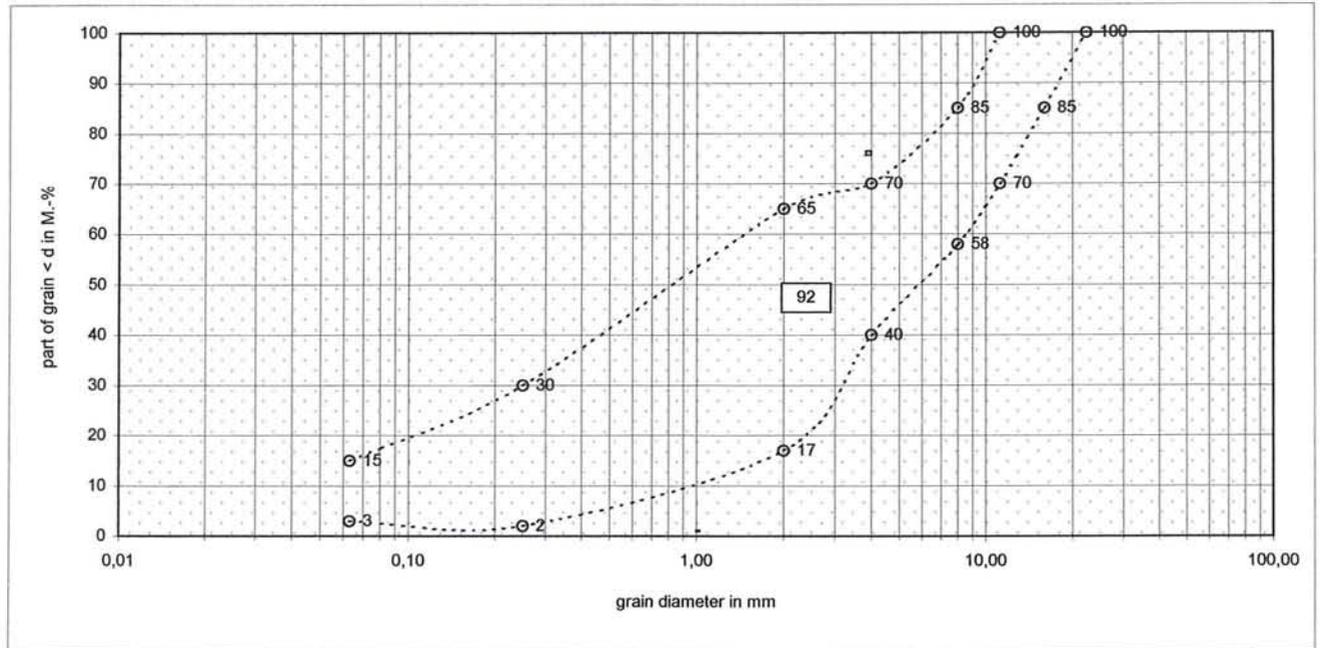
overall anhydrous mass of the examined assay:	0						g						
grain size mm	16,0	22,4	31,5	45,0	63,0	90,0							
transit (d) in M.-%													
assay sfp148													
assay													
grain size at (mm)	d ₁₀ 20,4		d ₃₀ 27			d ₆₀ 40		d ₁₀		d ₃₀		d ₆₀	
assay number	sfp1 05												
tapping point:													
depth													
soil group n. DIN 18196													
soil type at DIN 4022													
mineral nutrients	mixture of gravel and split material 20/64mm												
frost-susceptible class													
grain size interval													
fine grain <0,063 mm M.-%													
unter grain < 22,4mm M.-%													
split-gravel 22,4 - 64mm M.-%													
over grain > 64mm M.-%													
uniformity grade U													
coving rate C _c													
water content < 32 mm M.-%													
comments:													



construction project: E18 Grimstad - Kristiansand
 construction stage: for ASG 20
 withdrawal at the
 assay at the:

grain size: 0/20
 section no.:
 appearance:
 by:
 by:

graining line



partial size distribution of grain

overall anhydrous mass of the examined assay:	0						g											
grain size mm	0,063	0,125	0,25	0,5	1,0	2,0	4,0	8,0	11,2	16,0	22,4	31,5						
transit (d) in M.-%																		
assay 37																		
assay																		
grain size at (mm)	d ₁₀ 0,063			d ₃₀ 0,43			d ₆₀ 4,9			d ₁₀			d ₃₀			d ₆₀		
assay number	92																	
tapping point:																		
depth																		
soil group n. DIN 18196																		
soil type at DIN 4022																		
mineral nutrients	mixture of split and crushed material. 0/20mm																	
frost-susceptible class																		
grain size interval	percentage of grain M.-%																	
fine grain <0,063 mm	M.-%																	
sand 0,063 - 2,0 mm	M.-%																	
split 2,0 - 32 mm	M.-%																	
gravel > 32 mm	M.-%																	
uniformity grade U																		
covering rate C _c																		
water content < 32 mm	M.-%																	
comments: without pre - sieving !																		

0,063	0,25	2	4	8	11,2	16	22,4
15	30	65	70	85	100	100	100
3	2	17	40	58	70	85	100

wighted sample zur Naßsiebung m_d :
 initial weight des Siebanteils m_a :
 dish: deviation

grain size mm	palimpsest	palimpsest	through pass	through pass %
	g	%	%	
				100,0
				100,0
				100,0
31,5		#DIV/0!	#DIV/0!	#DIV/0!
22,4		#DIV/0!	#DIV/0!	#DIV/0!
16		#DIV/0!	#DIV/0!	#DIV/0!
11,2		#DIV/0!	#DIV/0!	#DIV/0!
8		#DIV/0!	#DIV/0!	#DIV/0!
4		#DIV/0!	#DIV/0!	#DIV/0!
2		#DIV/0!	#DIV/0!	#DIV/0!
1		#DIV/0!	#DIV/0!	#DIV/0!
0,5		#DIV/0!	#DIV/0!	#DIV/0!
0,25		#DIV/0!	#DIV/0!	#DIV/0!
0,125		#DIV/0!	#DIV/0!	#DIV/0!
0,063		#DIV/0!	#DIV/0!	#DIV/0!
< 0,063		#DIV/0!		
sum <22,4mm		#DIV/0!		
loss		#DIV/0!		

overall mass	
mass clammy (g)	
mass dry (g)	
mass water (g)	
water content (1)	

oversize grain > 22,4 mm	
mass clammy \dot{U}_f [g]	
mass clammy \dot{U}_t [g]	

percentage of grain < 22,4 mm	
mass clammy	
mass dry	

water content w_n Anteil < 22,4 mm	
$m_f + m_b$ (g)	
$m_t + m_b$ (g)	
m_b (g)	
m_w (g)	
m_t (g)	
$w_n < 22,4\text{mm}$ (1)	

initial weight for Naßsiebung m_d :
 initial weight des Siebanteils m_a :
 dish: deviation

grain size mm	palimpsest	palimpsest	through pass	through pass %
	g	%	%	
				100,0
				100,0
				100,0
31,5		#DIV/0!	#DIV/0!	#DIV/0!
22,4		#DIV/0!	#DIV/0!	#DIV/0!
11,2		#DIV/0!	#DIV/0!	#DIV/0!
11,2		#DIV/0!	#DIV/0!	#DIV/0!
8		#DIV/0!	#DIV/0!	#DIV/0!
4		#DIV/0!	#DIV/0!	#DIV/0!
2		#DIV/0!	#DIV/0!	#DIV/0!
1		#DIV/0!	#DIV/0!	#DIV/0!
0,5		#DIV/0!	#DIV/0!	#DIV/0!
0,25		#DIV/0!	#DIV/0!	#DIV/0!
0,125		#DIV/0!	#DIV/0!	#DIV/0!
0,063		#DIV/0!	#DIV/0!	#DIV/0!
< 0,063	0	#DIV/0!		
sum <32mm	0,0	#DIV/0!		
loss	0,0	#DIV/0!		

overall mass	
mass clammy (g)	
mass dry (g)	#DIV/0!
mass water (g)	#DIV/0!
water content (1)	#DIV/0!

oversize grain > 22,4 mm	
mass clammy \dot{U}_f [g]	0
mass clammy \dot{U}_t [g]	0

percentage of grain < 22,4 mm	
mass clammy	0
mass dry	#DIV/0!

water content w_n Anteil < 22,4 mm	
$m_f + m_b$ (g)	
$m_t + m_b$ (g)	
m_b (g)	
m_w (g)	0
m_t (g)	0
$w_n < 32\text{mm}$ (1)	#DIV/0!

Projekt no.:	
Construction project:	Section no.:
Material:	date of sampling:
Mix design: no.:	Chainage
Sample no.:	Line:

TEST-RESULTS

1. Sieve analysis:

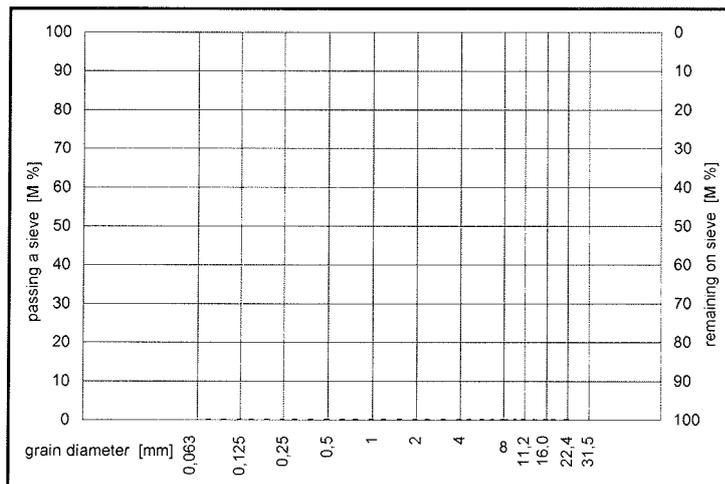
grain size (mm)		results		requirements ²⁾	requirements including tolerances ³⁾
		M %	Σ M % ¹⁾		
> 22,4	M %				
16 - 22,4	M %				
11,2 - 16	M %				
8 - 11,2	M %				
4 - 8	M %				
2 - 4	M %				
1 - 2	M %				
0,5 - 1	M %				
0,25 - 0,5	M %				
0,125 - 0,25	M %				
0,063 - 0,125	M %				
< 0,063	M %				
chipping (2 - 22,4 mm)	M %				
sand (0,063 - 2 mm)	M %				

3. Binder:

soluble binder content	M %			
surcharge for unsoluble	M %			
binder content (total)	M %			
softening point r.a.b.	°C			

4. Asphalt

water content	%		
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Remarks:

- 1) "!" = Deviation (out of tolerances)
- 2) Quality requirements according to CJV E 18 contract, sent by e-mail from 15-10-2007 and handbook 018 (abstract 653.12)
- 3) Tolerances according to handbook 018 (abstract 651)

Site:	Section no.:
Material:	Date of sampling:
Mix design: no.:	Chainage:
Sample no.:	

TEST-RESULTS

1. Asphalt characteristic

		results	requirements ²⁾	nominal values including tolerances ³⁾
		¹⁾		
maximum density	g/cm ³			
bulk density	g/cm ³			
void cont. of marshall-spec.	Vol.%			

2. Core

bulk density	g/cm ³			
void content of core	Vol.%			
compaction degree	%			
thickness	cm			

Remarks: ¹⁾ "!" = Deviation (out of tolerances)
²⁾ Quality requirements according to CJV E 18 contract (sent by e-mail from 15-10-2007) and mix design
³⁾ Tolerances according to handbook 018 (abstract 651)

3. Pictures
