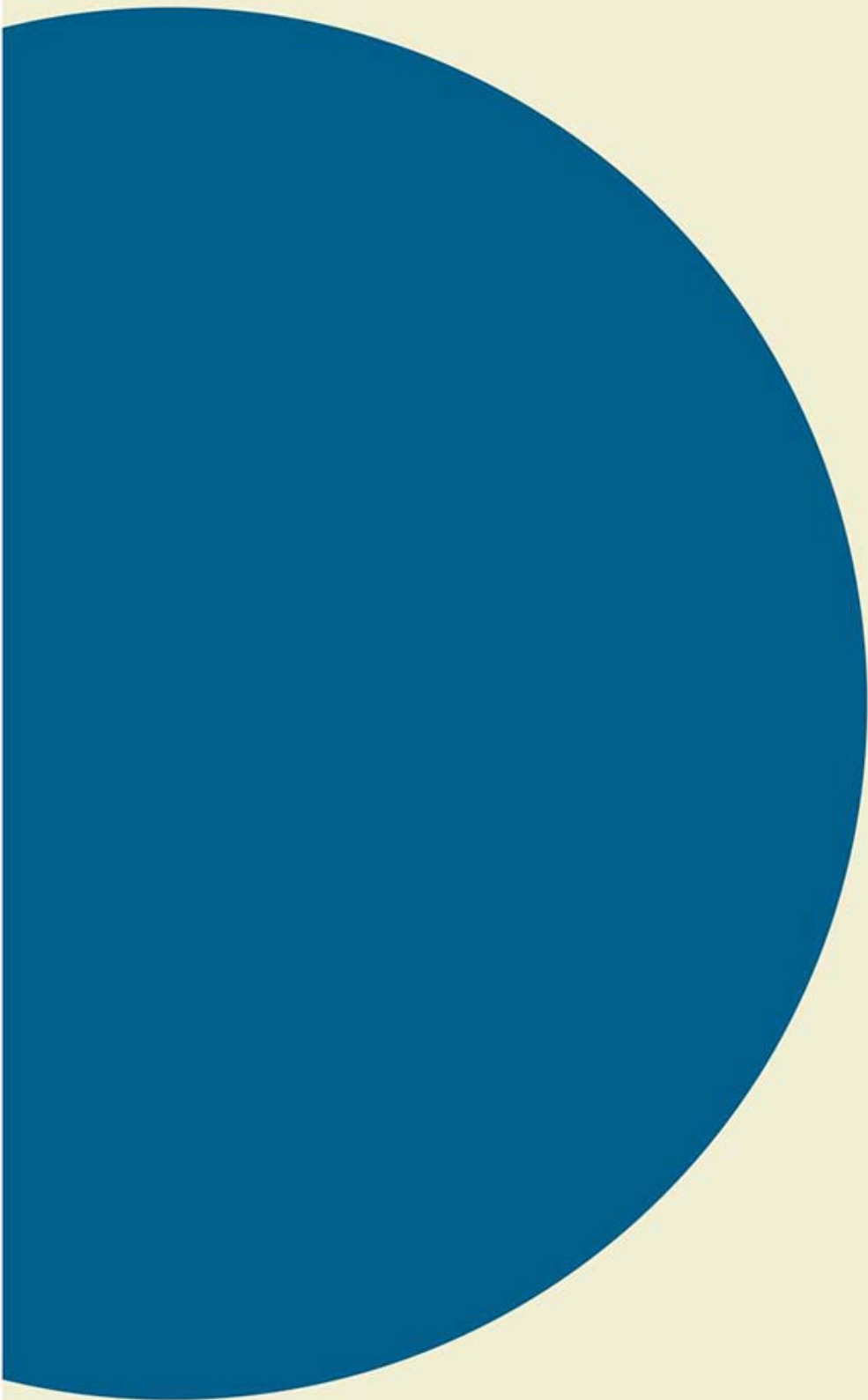


# **Datareport: Grain size distribution**

Laboratory analysis for DTU AQUA

I. Nørgaard



## **Datareport: Grain size distribution**

Laboratory analysis for DTU AQUA

I. Nørgaard

## Sediment samples.

Gear used: 0.1 m<sup>2</sup> Van Veen grab sampler, sample rested for 30-60 minutes before draining of the supernatant, one subsample of about 2 kg were retrieved from each sediment sample.

Sample ID	Transect	Site	Date	Time, UTM +2hr (hr:min:sec)	North (dg min.sec)	East (dg min.sec)	Depth, m	No. of samples	Type of sample	Gear
12OAs	O	A	19. juni 2012	11:47:04	55 21.340	003 46.516	28,0	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12OBs	O	B	19. juni 2012	12:21:42	55 21.189	003 46.457	28,0	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12OCs	O	C	19. juni 2012	12:45:34	55 21.064	003 46.444	27,7	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12ODs	O	D	19. juni 2012	13:07:42	55 20.980	003 46.444	27,8	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12OEs	O	E	19. juni 2012	13:36:56	55 20.846	003 46.461	28,2	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12OFs	O	F	19. juni 2012	15:34:54	55 20.718	003 46.446	28,3	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12OGs	O	G	19. juni 2012	15:53:46	55 20.617	003 46.445	28,2	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12OHs	O	H	19. juni 2012	16:12:54	55 20.498	003 46.462	28,3	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12OXs	O	X	20. juni 2012	16:42:52	55 20.911	003 46.570	28,0	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12NAs	N	A	20. juni 2012	09:21:36	55 21.304	003 46.133	28,4	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12NBs	N	B	20. juni 2012	09:37:32	55 21.212	003 46.140	28,2	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12NCs	N	C	20. juni 2012	09:54:20	55 21.087	003.46.141	28,2	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12NDs	N	D	20. juni 2012	10:09:50	55 20.984	003 46.141	28,0	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12NEs	N	E	20. juni 2012	10:26:08	55 20.846	003 46.129	28,2	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12NFs	N	F	20. juni 2012	10:41:18	55 20.723	003 46.132	28,0	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12NGs	N	G	20. juni 2012	10:57:52	55 20.614	003 46.150	28,0	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12NHs	N	H	20. juni 2012	11:13:58	55 20.503	003 46.150	24,9	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12KAs	K	A	20. juni 2012	13:11:08	55 21.310	003 46.756	27,8	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12KBs	K	B	20. juni 2012	13:27:38	55 21.223	003 46.727	27,8	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12KCs	K	C	20. juni 2012	13:44:16	55 21.088	003 46.726	27,8	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12KDc	K	D	20. juni 2012	14:01:40	55 20.981	003 46.769	27,8	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12KEs	K	E	20. juni 2012	14:20:40	55 20.838	003 46.750	27,8	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12KFs	K	F	20. juni 2012	14:37:36	55 20.724	003 46.732	27,8	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12KGs	K	G	20. juni 2012	14:54:58	55 20.610	003 46.711	27,9	1	Sediment	Van Veen 0.1 m <sup>2</sup>
12KHs	K	H	20. juni 2012	15:11:48	55 20.495	003 46.751	27,8	1	Sediment	Van Veen 0.1 m <sup>2</sup>

## **Sample treatment**

GEUS has carried out analyses on 25 grab sample sediments from Dogger Bank. When received the samples were registered with the following five categories:

- date
- locality
- laboratory number in succession
- client
- analysis requirements

Remaining analysis material is only kept for 14 days after reporting.

## **Analysis methods**

### **Loss on ignition determination**

The organic content and the content of chemically-bonded water are determined with the loss on ignition analysis. The loss on ignition is determined in weight % of material dried at 105° C. The analyses are carried out according to DS 405 in part and DS 204 in part.

Appendix 1

### **Grain size distribution**

Sieve analysis:

The total sample is dried and washed through a 0,063 mm sieve. The resulting sediment is sieved through a sieve column from 16 mm to 0,063 mm with ½ phi intervals, which corresponds to 15 sieves. The method is adapted from to DS/EN 933-1, as there are more sieves than described in this standard.

Appendix 2

# **Appendix 1**

**Dogger Bank juni 2012**  
Glødetab DS 204

Sample	Glødetab i %
12OAs	0,97
12OBs	0,56
12OCs	0,62
12ODs	0,60
12OEs	0,91
12OFs	1,36
12OGs	1,16
12OHs	1,24
12OXs	0,43
12NAs	0,69
12NBs	0,42
12NCs	0,57
12NDs	1,09
12NEs	1,08
12NFs	0,75
12NGs	1,56
12NHs	0,65
12KAs	0,78
12KBs	0,69
12KCs	0,50
12KDc	0,41
12KEs	0,33
12KFs	0,45
12KGs	0,37
12KHs	1,74

okt.2012

# **Appendix 2**

# Grain Size Distribution

Geotechnical

**Sample Id:** 120As  
**Lab. Id:** 120186  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 133,04 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,57	1,93	98,07
4,00	-2,00	8,69	6,53	91,54
2,80	-1,49	1,80	1,35	90,18
2,00	-1,00	1,32	0,99	89,19
1,40	-0,49	1,02	0,77	88,42
1,00	0,00	1,33	1,00	87,42
0,710	0,49	0,62	0,47	86,96
0,500	1,00	1,02	0,77	86,19
0,355	1,49	2,53	1,90	84,29
0,250	2,00	10,52	7,91	76,38
0,180	2,47	39,11	29,40	46,99
0,125	3,00	50,93	38,28	8,70
0,090	3,47	9,05	6,80	1,90
0,075	3,74	1,01	0,76	1,14
0,063	3,99	0,18	0,14	1,01
< 0,063	> 3,99	1,34	1,01	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	1,01
Sand, fine (0,063 mm - 0,200 mm)	54,38
Sand, medium (0,2 mm - 0,6 mm)	31,17
Sand, coarse (0,6 mm - 2 mm)	2,63
Gravel (> 2 mm)	10,81
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	6,12	-2,61
16%	84%	0,35	1,51
25%	75%	0,25	2,02
40%	60%	0,21	2,24
Median 50%	50%	0,19	2,42
75%	25%	0,15	2,75
84%	16%	0,14	2,88
90%	10%	0,13	2,98
95%	5%	0,11	3,24

## Moments Statistics

Mean	2,27
Sorting	1,23
Skewness	-0,52
Kurtosis	3,27
Uniformity Coefficient	1,66

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

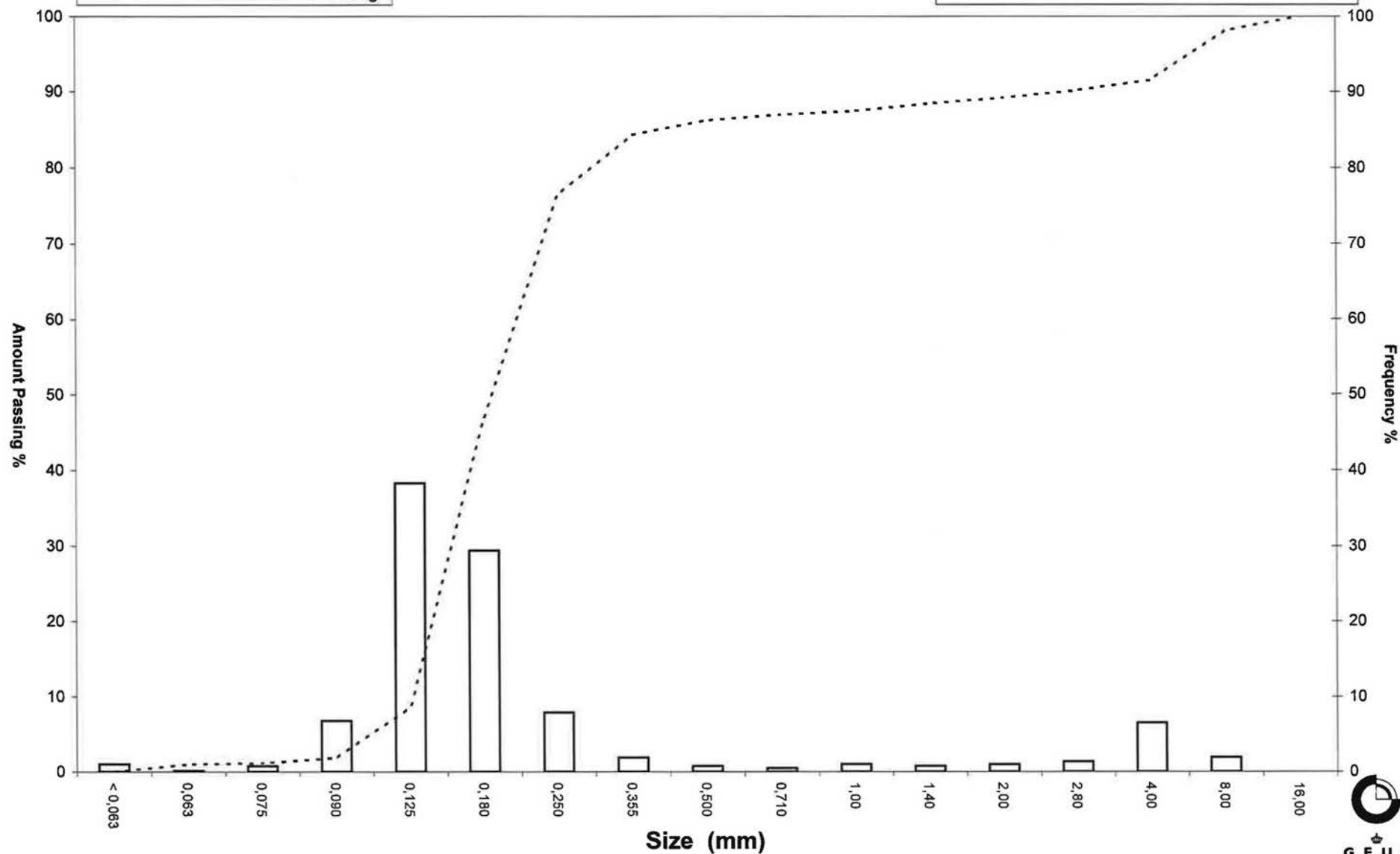
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 www.geus.dk



# Grain Size Distribution

Sample Id: 120As

Frequency Percent  
Cumulated Amount Passing



# Grain Size Distribution

Geotechnical

**Sample Id:** 120As  
**Lab. Id:** 120186  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 133,04 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,57	1,93	98,07
4,00	-2,00	8,69	6,53	91,54
2,80	-1,49	1,80	1,35	90,18
2,00	-1,00	1,32	0,99	89,19
1,40	-0,49	1,02	0,77	88,42
1,00	0,00	1,33	1,00	87,42
0,710	0,49	0,62	0,47	86,96
0,500	1,00	1,02	0,77	86,19
0,355	1,49	2,53	1,90	84,29
0,250	2,00	10,52	7,91	76,38
0,180	2,47	39,11	29,40	46,99
0,125	3,00	50,93	38,28	8,70
0,090	3,47	9,05	6,80	1,90
0,075	3,74	1,01	0,76	1,14
0,063	3,99	0,18	0,14	1,01
< 0,063	> 3,99	1,34	1,01	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	1,01
Sand, fine (0,063 mm - 0,200 mm):	54,38
Sand, medium (0,2 mm - 0,6 mm):	31,17
Sand, coarse (0,6 mm - 2 mm):	2,63
Gravel (> 2 mm):	10,81
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	6,12	-2,61
16%	84%	0,35	1,51
25%	75%	0,25	2,02
40%	60%	0,21	2,24
Median 50%	50%	0,19	2,42
75%	25%	0,15	2,75
84%	16%	0,14	2,88
90%	10%	0,13	2,98
95%	5%	0,11	3,24

## Moments Statistics

Mean	2,27
Sorting	1,23
Skewness	-0,52
Kurtosis	3,27
Uniformity Coefficient	1,66

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

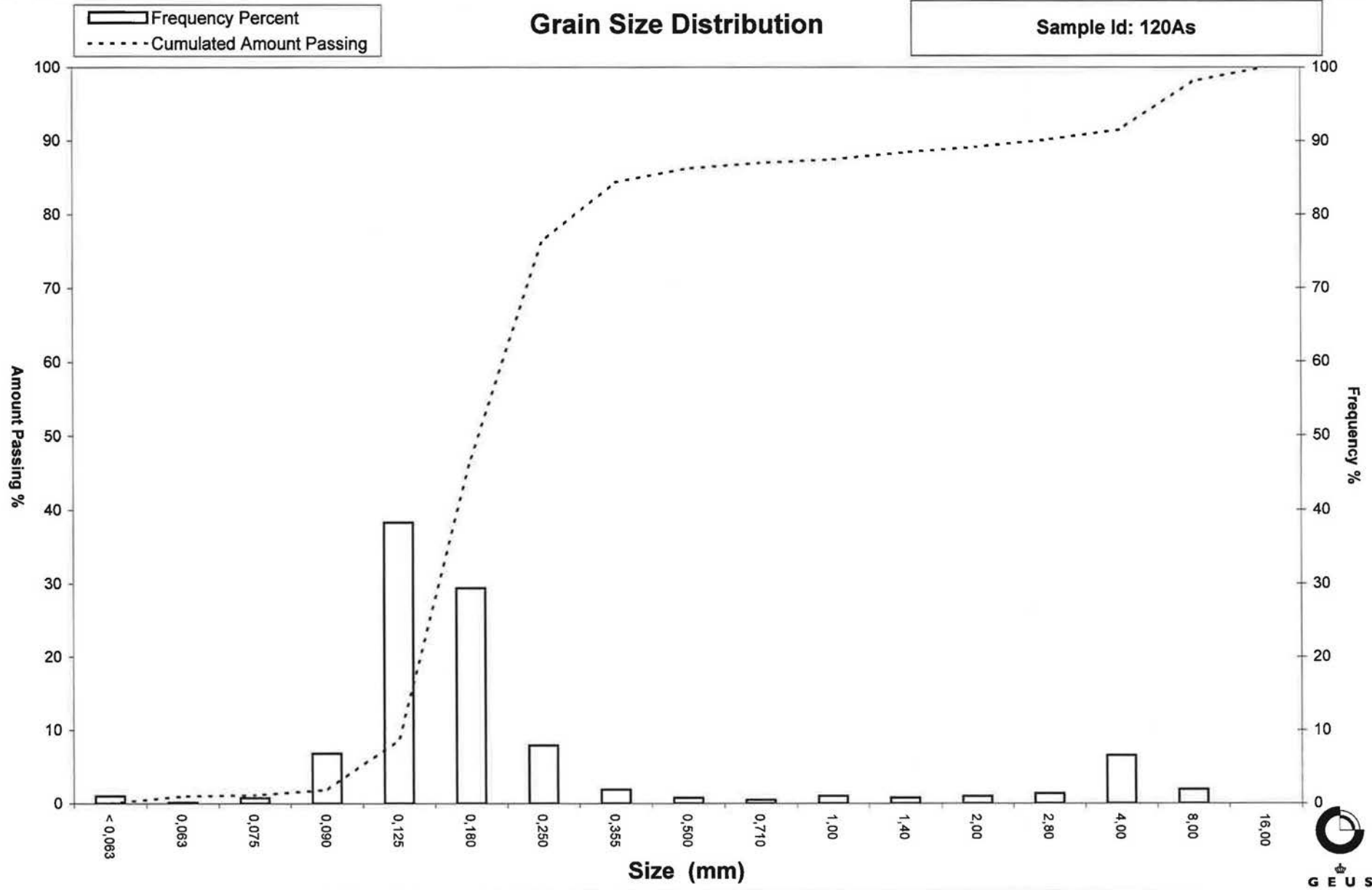
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 120As



# Grain Size Distribution

Geotechnical

**Sample Id:** 120Bs  
**Lab. Id:** 120187  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 128,53 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,01	1,56	98,44
4,00	-2,00	1,49	1,16	97,28
2,80	-1,49	0,98	0,76	96,51
2,00	-1,00	0,79	0,61	95,90
1,40	-0,49	0,39	0,30	95,60
1,00	0,00	0,85	0,66	94,94
0,710	0,49	0,60	0,47	94,47
0,500	1,00	0,94	0,73	93,74
0,355	1,49	2,28	1,77	91,96
0,250	2,00	11,12	8,65	83,31
0,180	2,47	44,36	34,51	48,80
0,125	3,00	54,71	42,57	6,23
0,090	3,47	6,22	4,84	1,39
0,075	3,74	0,49	0,38	1,01
0,063	3,99	0,32	0,25	0,76
< 0,063	> 3,99	0,98	0,76	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	0,76
Sand, fine (0,063 mm - 0,200 mm):	57,90
Sand, medium (0,2 mm - 0,6 mm):	35,43
Sand, coarse (0,6 mm - 2 mm):	1,81
Gravel (> 2 mm):	4,10
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,04	-0,06
16%	84%	0,26	1,95
25%	75%	0,23	2,10
40%	60%	0,20	2,30
Median 50%	50%	0,18	2,45
75%	25%	0,15	2,74
84%	16%	0,14	2,86
90%	10%	0,13	2,94
95%	5%	0,12	3,11

## Moments Statistics

Mean	2,42
Sorting	0,71
Skewness	-0,35
Kurtosis	2,01
Uniformity Coefficient	1,56

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

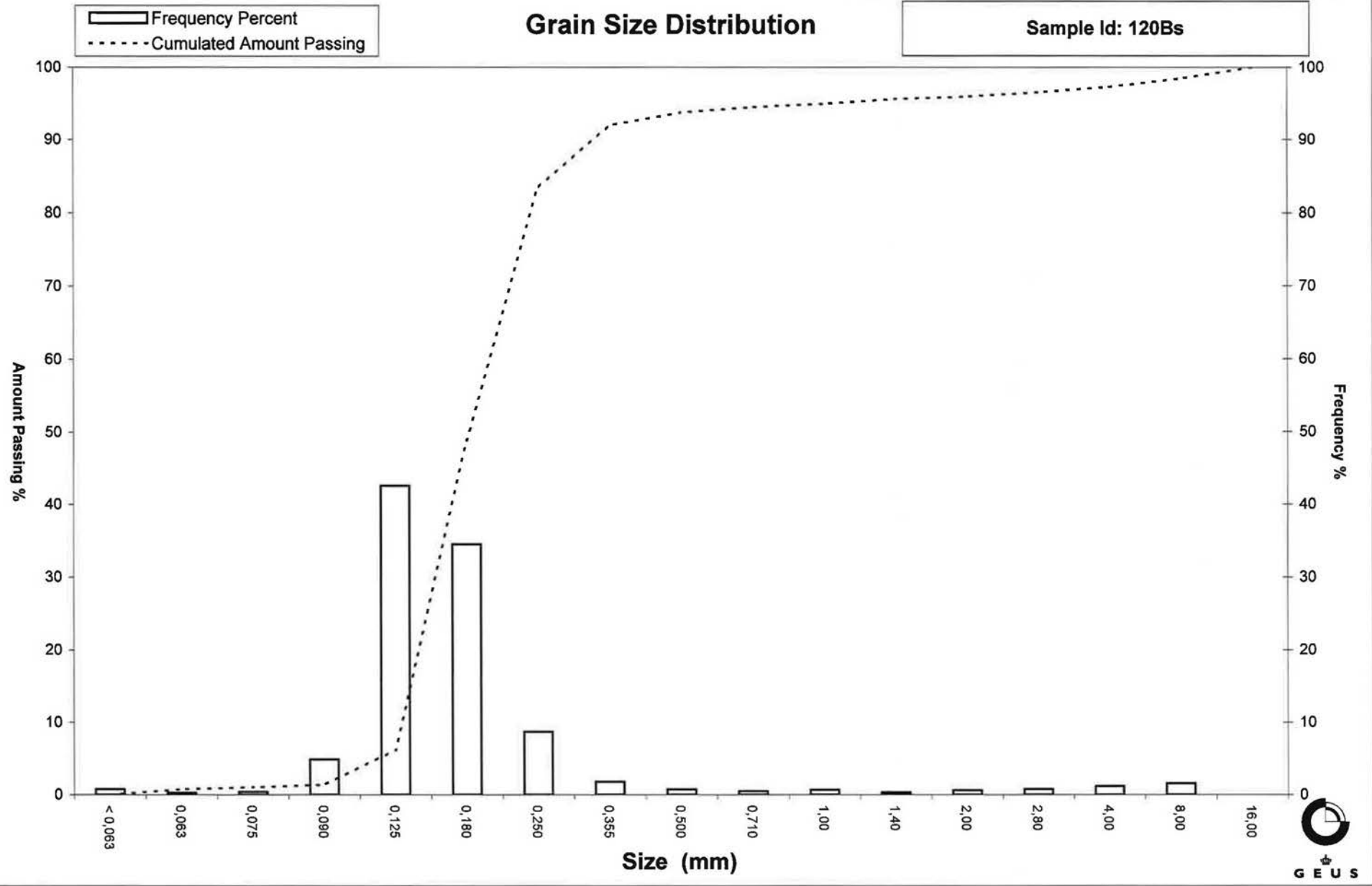
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 120Bs



# Grain Size Distribution

Geotechnical

**Sample Id:** 120Cs  
**Lab. Id:** 120188  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 110,77 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,05	0,95	99,05
4,00	-2,00	2,05	1,85	97,20
2,80	-1,49	1,01	0,91	96,29
2,00	-1,00	1,07	0,97	95,32
1,40	-0,49	0,30	0,27	95,05
1,00	0,00	0,66	0,60	94,46
0,710	0,49	0,52	0,47	93,99
0,500	1,00	0,97	0,88	93,11
0,355	1,49	2,79	2,52	90,59
0,250	2,00	13,56	12,24	78,35
0,180	2,47	37,06	33,46	44,89
0,125	3,00	42,98	38,80	6,09
0,090	3,47	5,38	4,86	1,24
0,075	3,74	0,31	0,28	0,96
0,063	3,99	0,09	0,08	0,88
< 0,063	> 3,99	0,97	0,88	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	0,88
Sand, fine (0,063 mm - 0,200 mm)	53,58
Sand, medium (0,2 mm - 0,6 mm)	39,07
Sand, coarse (0,6 mm - 2 mm)	1,79
Gravel (> 2 mm)	4,68
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,36	-0,45
16%	84%	0,30	1,74
25%	75%	0,24	2,04
40%	60%	0,21	2,24
Median 50%	50%	0,19	2,39
75%	25%	0,15	2,72
84%	16%	0,14	2,85
90%	10%	0,13	2,94
95%	5%	0,12	3,09

## Moments Statistics

Mean	2,33
Sorting	0,81
Skewness	-0,39
Kurtosis	2,14
Uniformity Coefficient	1,62

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the 1/4 phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

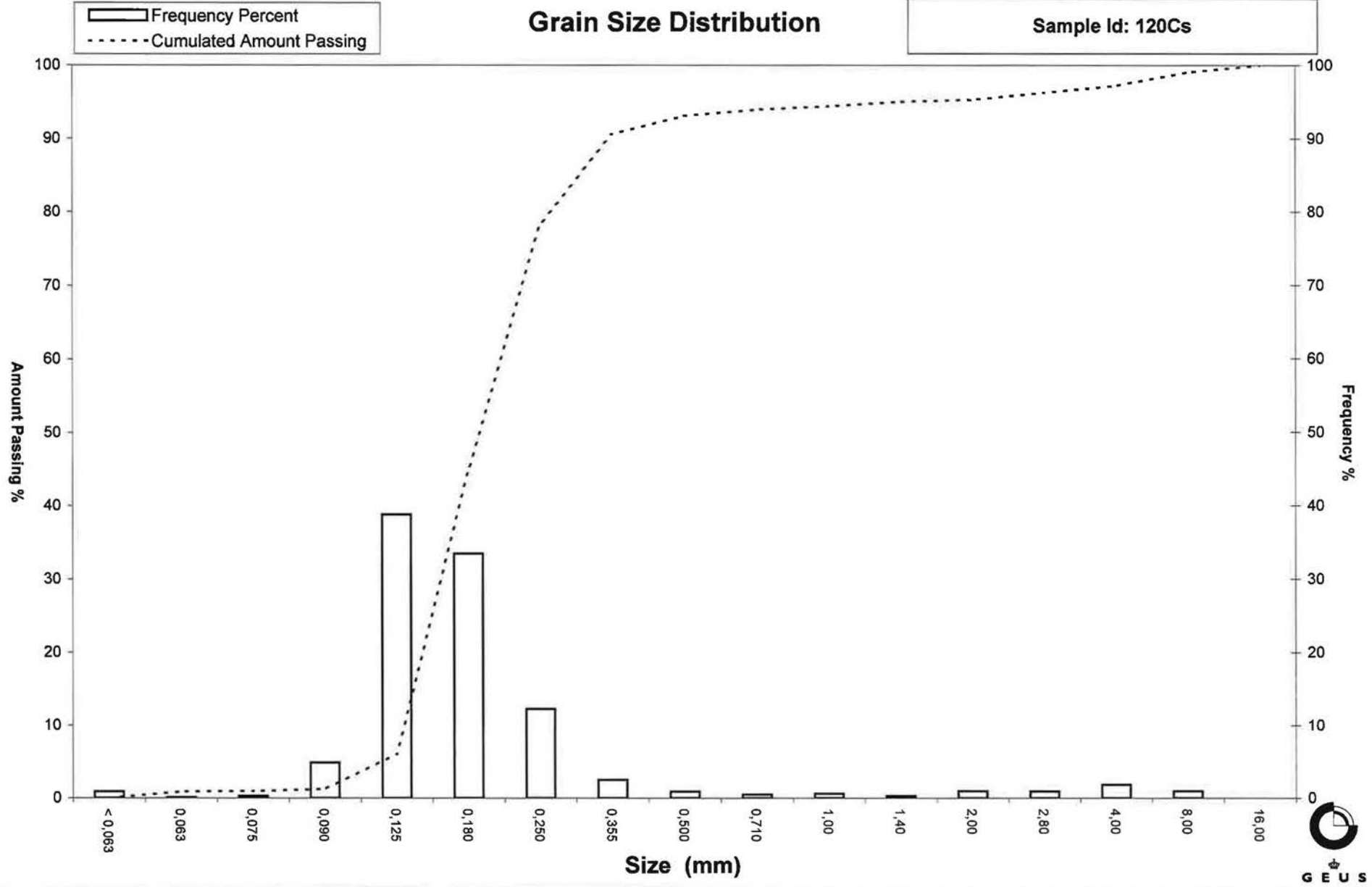
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 120Cs



# Grain Size Distribution

Geotechnical

**Sample Id:** 120Ds  
**Lab. Id:** 120189  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 113,65 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	1,04	0,92	99,08
2,80	-1,49	0,22	0,19	98,89
2,00	-1,00	0,19	0,17	98,72
1,40	-0,49	0,26	0,23	98,50
1,00	0,00	0,18	0,16	98,34
0,710	0,49	0,21	0,18	98,15
0,500	1,00	0,44	0,39	97,77
0,355	1,49	1,81	1,59	96,17
0,250	2,00	10,73	9,44	86,73
0,180	2,47	36,31	31,95	54,78
0,125	3,00	53,10	46,72	8,06
0,090	3,47	7,69	6,77	1,29
0,075	3,74	0,43	0,38	0,92
0,063	3,99	0,12	0,11	0,81
< 0,063	> 3,99	0,92	0,81	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	0,81
Sand, fine (0,063 mm - 0,200 mm):	63,10
Sand, medium (0,2 mm - 0,6 mm):	34,04
Sand, coarse (0,6 mm - 2 mm):	0,77
Gravel (> 2 mm):	1,28
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,34	1,55
16%	84%	0,24	2,03
25%	75%	0,22	2,16
40%	60%	0,19	2,39
Median 50%	50%	0,17	2,52
75%	25%	0,14	2,79
84%	16%	0,13	2,90
90%	10%	0,13	2,97
95%	5%	0,11	3,20

## Moments Statistics

Mean	2,48
Sorting	0,46
Skewness	-0,15
Kurtosis	1,07
Uniformity Coefficient	1,50

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

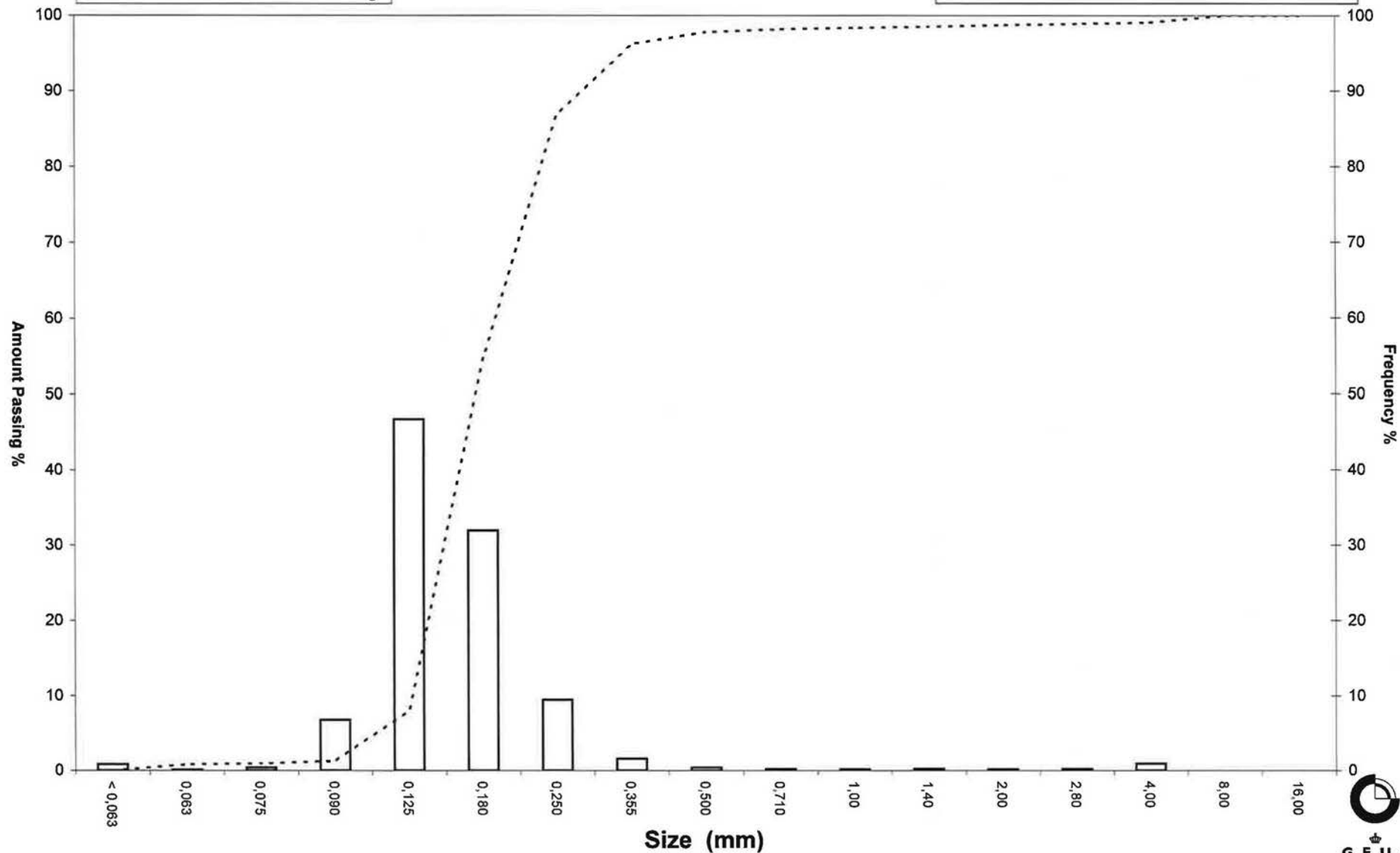
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# Grain Size Distribution

Sample Id: 120Ds

Frequency Percent  
Cumulated Amount Passing



# Grain Size Distribution

Geotechnical

**Sample Id:** 120Es  
**Lab. Id:** 120190  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 115,01 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	5,39	4,69	95,31
2,80	-1,49	0,88	0,77	94,55
2,00	-1,00	0,22	0,19	94,36
1,40	-0,49	0,41	0,36	94,00
1,00	0,00	0,46	0,40	93,60
0,710	0,49	0,49	0,43	93,17
0,500	1,00	0,76	0,66	92,51
0,355	1,49	2,53	2,20	90,31
0,250	2,00	12,36	10,75	79,57
0,180	2,47	36,96	32,14	47,43
0,125	3,00	46,84	40,73	6,70
0,090	3,47	6,13	5,33	1,37
0,075	3,74	0,32	0,28	1,10
0,063	3,99	0,11	0,10	1,00
< 0,063	> 3,99	1,15	1,00	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm):	1,00
Sand, fine (0,063 mm - 0,200 mm):	55,61
Sand, medium (0,2 mm - 0,6 mm):	36,22
Sand, coarse (0,6 mm - 2 mm):	1,53
Gravel (> 2 mm):	5,64
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	3,51	-1,81
16%	84%	0,29	1,77
25%	75%	0,24	2,06
40%	60%	0,21	2,27
Median 50%	50%	0,19	2,43
75%	25%	0,15	2,74
84%	16%	0,14	2,86
90%	10%	0,13	2,95
95%	5%	0,11	3,14

## Moments Statistics

Mean	2,35
Sorting	1,02
Skewness	-0,46
Kurtosis	2,98
Uniformity Coefficient	1,60

The analysis is executed according to DS405.9  
 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles  
 are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

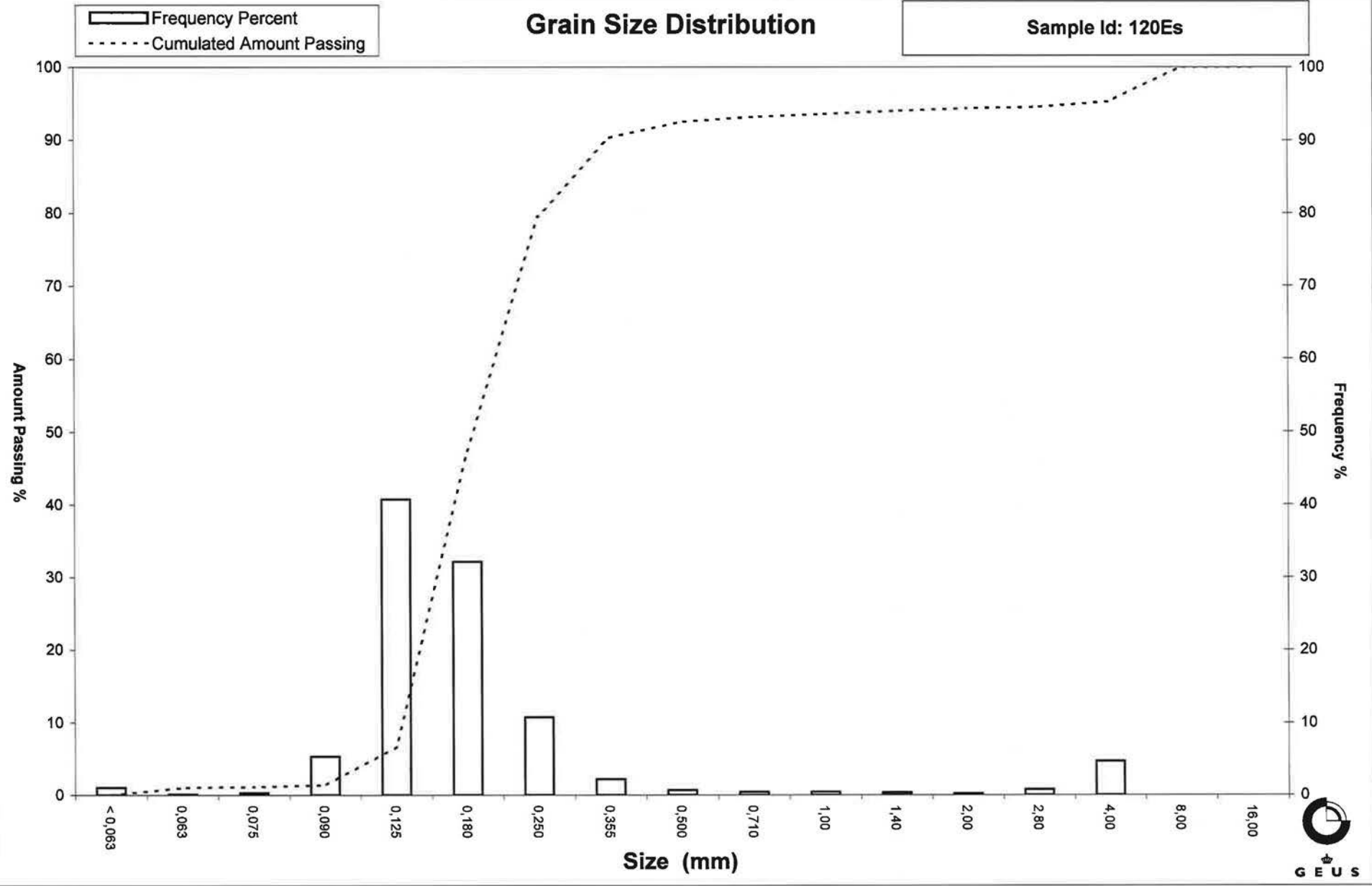
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 120Es



# Grain Size Distribution

Geotechnical

**Sample Id:** 120Fs  
**Lab. Id:** 120191  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 108,66 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,80	1,66	98,34
4,00	-2,00	1,85	1,70	96,64
2,80	-1,49	0,59	0,54	96,10
2,00	-1,00	0,41	0,38	95,72
1,40	-0,49	0,16	0,15	95,57
1,00	0,00	0,40	0,37	95,21
0,710	0,49	0,26	0,24	94,97
0,500	1,00	0,39	0,36	94,61
0,355	1,49	1,19	1,10	93,51
0,250	2,00	7,59	6,99	86,53
0,180	2,47	34,69	31,93	54,60
0,125	3,00	50,94	46,88	7,72
0,090	3,47	6,71	6,18	1,55
0,075	3,74	0,59	0,54	1,00
0,063	3,99	0,08	0,07	0,93
< 0,063	> 3,99	1,01	0,93	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	0,93
Sand, fine (0,063 mm - 0,200 mm)	62,79
Sand, medium (0,2 mm - 0,6 mm)	31,05
Sand, coarse (0,6 mm - 2 mm)	0,94
Gravel (> 2 mm)	4,28
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,75	0,41
16%	84%	0,24	2,03
25%	75%	0,22	2,15
40%	60%	0,19	2,38
Median 50%	50%	0,17	2,52
75%	25%	0,15	2,78
84%	16%	0,13	2,89
90%	10%	0,13	2,97
95%	5%	0,11	3,19

## Moments Statistics

Mean	2,48
Sorting	0,64
Skewness	-0,32
Kurtosis	1,81
Uniformity Coefficient	1,50

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

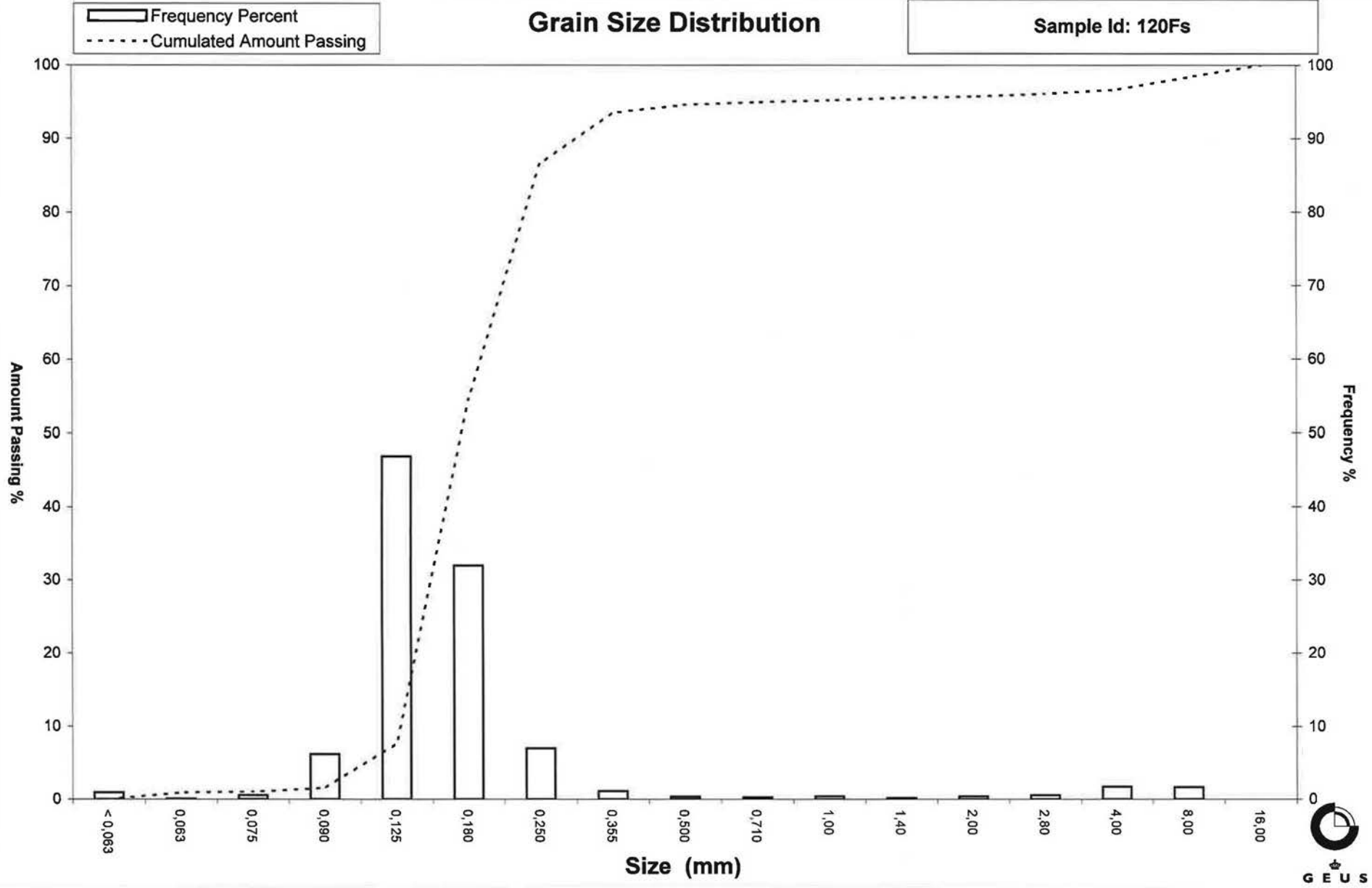
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 120Fs



# Grain Size Distribution

Geotechnical

**Sample Id:** 120Gs  
**Lab. Id:** 120192  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 130,13 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	2,22	1,71	98,29
2,80	-1,49	0,73	0,56	97,73
2,00	-1,00	0,43	0,33	97,40
1,40	-0,49	0,45	0,35	97,06
1,00	0,00	0,63	0,48	96,57
0,710	0,49	0,36	0,28	96,30
0,500	1,00	0,73	0,56	95,74
0,355	1,49	2,15	1,65	94,08
0,250	2,00	11,35	8,72	85,36
0,180	2,47	45,99	35,34	50,02
0,125	3,00	56,88	43,71	6,31
0,090	3,47	6,51	5,00	1,31
0,075	3,74	0,45	0,35	0,96
0,063	3,99	0,09	0,07	0,89
< 0,063	> 3,99	1,16	0,89	0,00

Sieve Analysis

Gravel  
Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm):	0,89
Sand, fine (0,063 mm - 0,200 mm):	59,22
Sand, medium (0,2 mm - 0,6 mm):	35,88
Sand, coarse (0,6 mm - 2 mm):	1,40
Gravel (> 2 mm):	2,60
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,44	1,20
16%	84%	0,25	2,02
25%	75%	0,23	2,12
40%	60%	0,20	2,32
Median 50%	50%	0,18	2,47
75%	25%	0,15	2,75
84%	16%	0,14	2,87
90%	10%	0,13	2,95
95%	5%	0,12	3,11

## Moments Statistics

Mean	2,45
Sorting	0,50
Skewness	-0,21
Kurtosis	1,25
Uniformity Coefficient	1,54

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

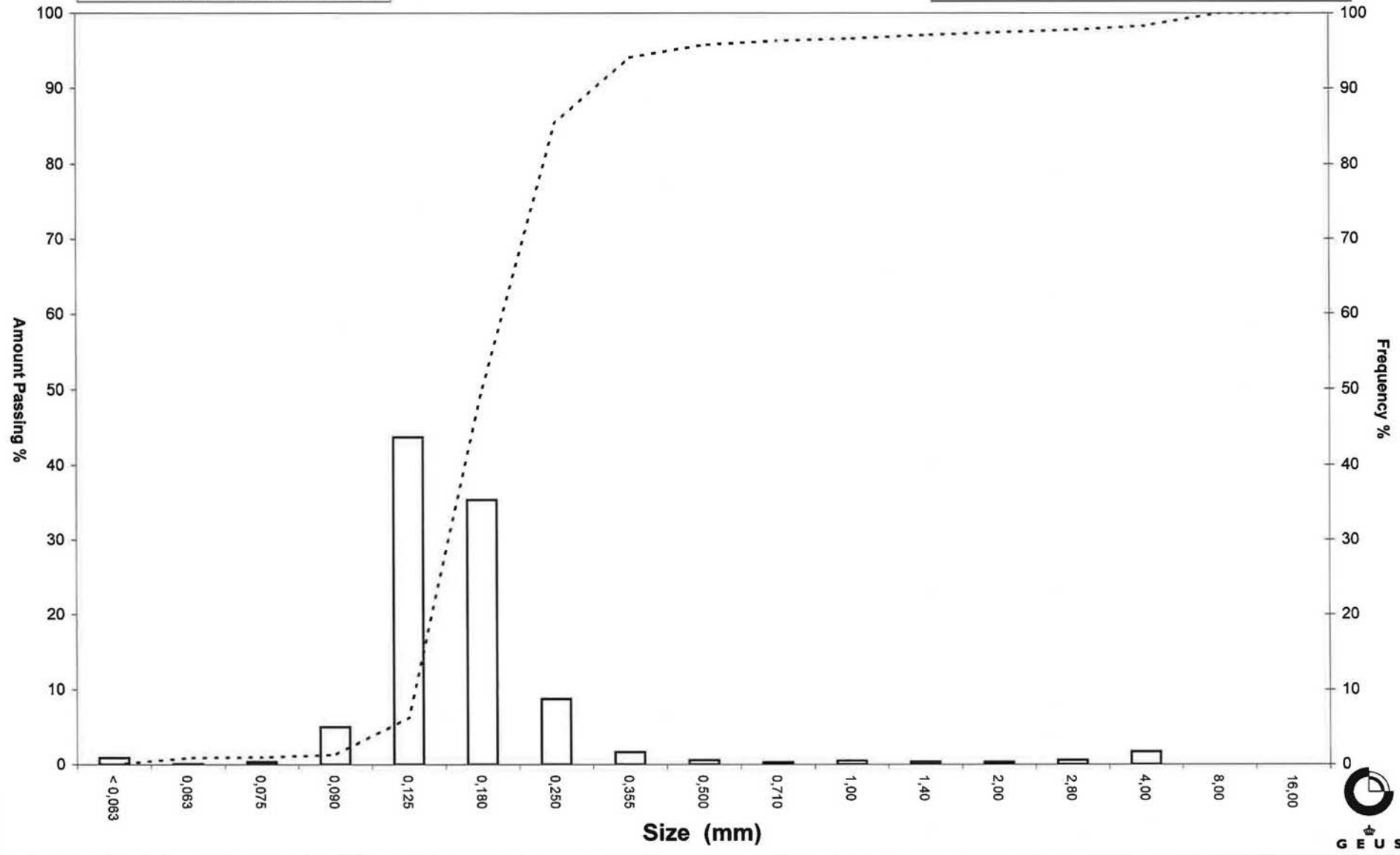
Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 120Gs

Frequency Percent  
Cumulated Amount Passing



# Grain Size Distribution

Geotechnical

**Sample Id:** 120Hs  
**Lab. Id:** 120193  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 125,81 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	4,52	3,59	96,41
4,00	-2,00	3,36	2,67	93,74
2,80	-1,49	1,28	1,02	92,72
2,00	-1,00	0,73	0,58	92,14
1,40	-0,49	0,48	0,38	91,76
1,00	0,00	0,49	0,39	91,37
0,710	0,49	0,54	0,43	90,94
0,500	1,00	0,82	0,65	90,29
0,355	1,49	2,39	1,90	88,39
0,250	2,00	13,02	10,35	78,04
0,180	2,47	40,89	32,50	45,54
0,125	3,00	49,66	39,47	6,06
0,090	3,47	6,13	4,87	1,19
0,075	3,74	0,32	0,25	0,94
0,063	3,99	0,09	0,07	0,87
< 0,063	> 3,99	1,09	0,87	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	0,87
Sand, fine (0,063 mm - 0,200 mm)	53,96
Sand, medium (0,2 mm - 0,6 mm)	35,77
Sand, coarse (0,6 mm - 2 mm)	1,54
Gravel (> 2 mm)	7,86
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	5,89	-2,56
16%	84%	0,31	1,69
25%	75%	0,24	2,04
40%	60%	0,21	2,24
Median 50%	50%	0,19	2,40
75%	25%	0,15	2,72
84%	16%	0,14	2,85
90%	10%	0,13	2,94
95%	5%	0,12	3,09

## Moments Statistics

Mean	2,31
Sorting	1,15
Skewness	-0,49
Kurtosis	3,38
Uniformity Coefficient	1,62

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

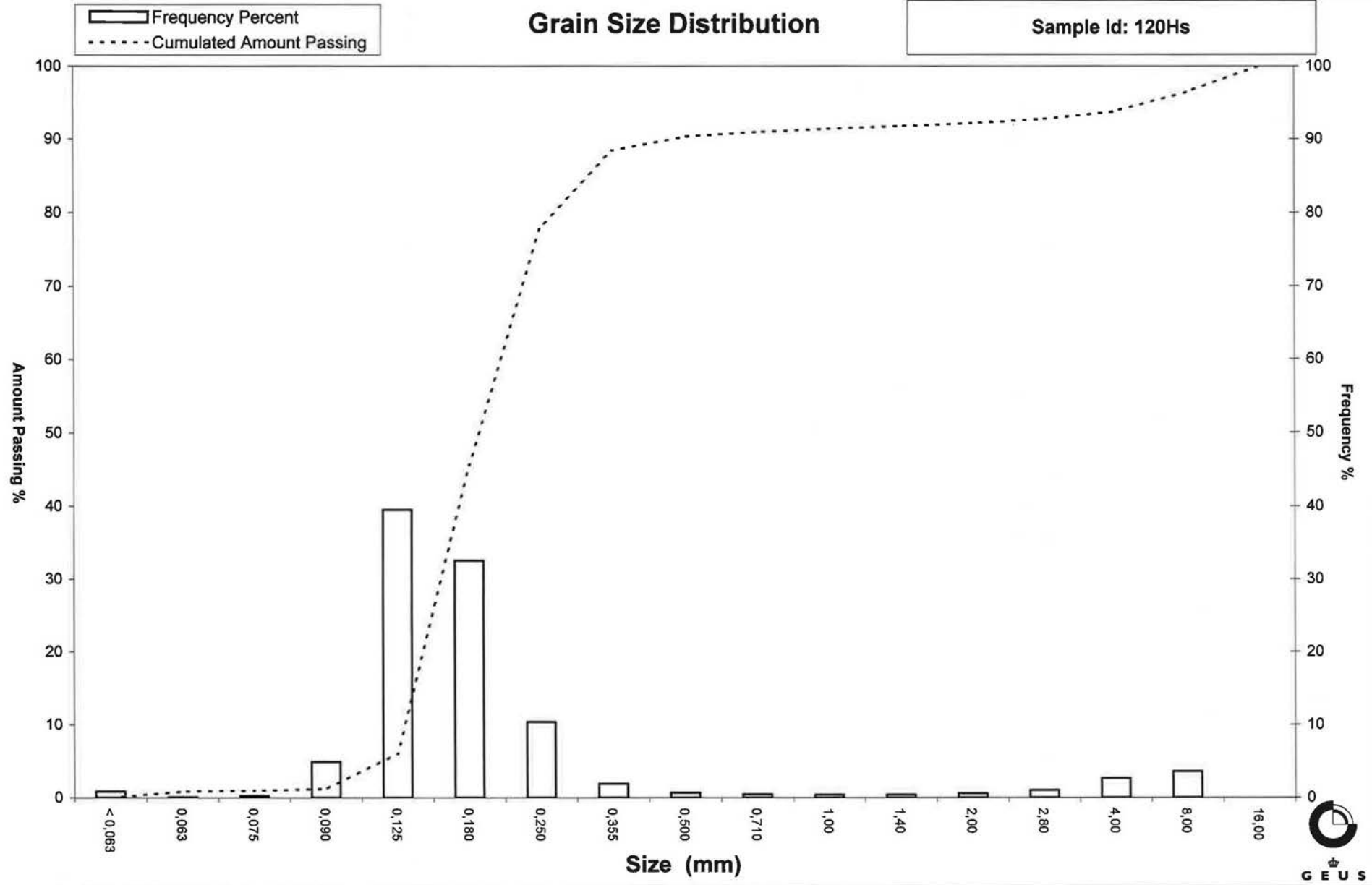
Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 120Hs



# Grain Size Distribution

Geotechnical

**Sample Id:** 120Xs  
**Lab. Id:** 120194  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 107,24 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,08	1,01	98,99
4,00	-2,00	2,09	1,95	97,04
2,80	-1,49	0,68	0,63	96,41
2,00	-1,00	0,32	0,30	96,11
1,40	-0,49	0,34	0,32	95,79
1,00	0,00	0,42	0,39	95,40
0,710	0,49	0,36	0,34	95,07
0,500	1,00	0,68	0,63	94,43
0,355	1,49	2,07	1,93	92,50
0,250	2,00	10,72	10,00	82,51
0,180	2,47	33,77	31,49	51,02
0,125	3,00	47,01	43,84	7,18
0,090	3,47	6,24	5,82	1,36
0,075	3,74	0,36	0,34	1,03
0,063	3,99	0,09	0,08	0,94
< 0,063	> 3,99	1,01	0,94	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	0,94
Sand, fine (0,063 mm - 0,200 mm):	59,07
Sand, medium (0,2 mm - 0,6 mm):	34,72
Sand, coarse (0,6 mm - 2 mm):	1,38
Gravel (> 2 mm):	3,89
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,69	0,54
16%	84%	0,27	1,91
25%	75%	0,23	2,10
40%	60%	0,20	2,32
Median 50%	50%	0,18	2,48
75%	25%	0,15	2,76
84%	16%	0,14	2,88
90%	10%	0,13	2,96
95%	5%	0,11	3,16

## Moments Statistics

Mean	2,42
Sorting	0,64
Skewness	-0,33
Kurtosis	1,62
Uniformity Coefficient	1,56

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

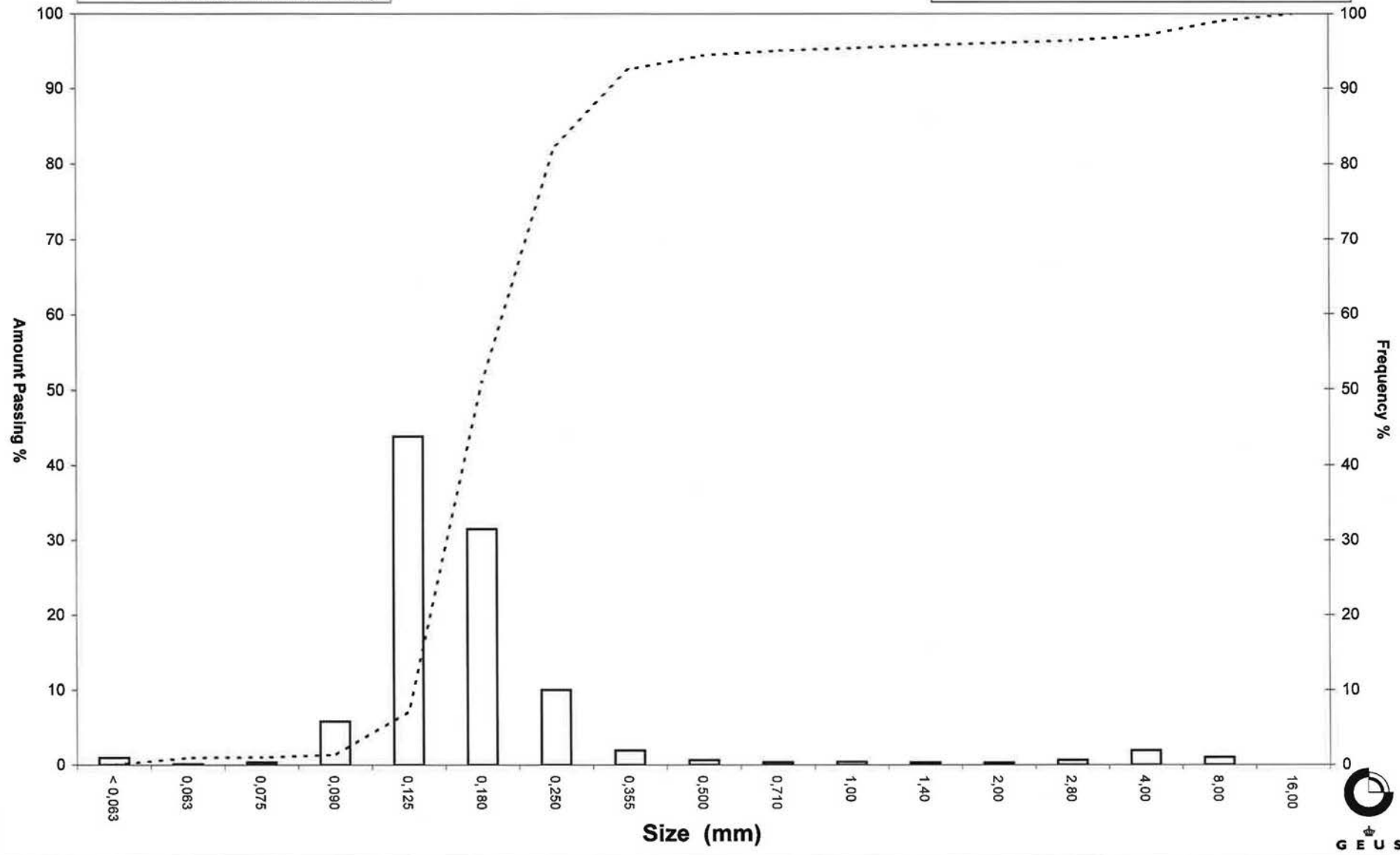
Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 120Xs

Frequency Percent  
Cumulated Amount Passing



# Grain Size Distribution

Geotechnical

**Sample Id:** 12NAs  
**Lab. Id:** 120195  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 106,41 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,55	0,52	99,48
2,80	-1,49	0,21	0,20	99,29
2,00	-1,00	0,23	0,22	99,07
1,40	-0,49	0,20	0,19	98,88
1,00	0,00	0,36	0,34	98,54
0,710	0,49	0,29	0,27	98,27
0,500	1,00	0,55	0,52	97,75
0,355	1,49	1,56	1,47	96,29
0,250	2,00	8,48	7,97	88,32
0,180	2,47	36,13	33,95	54,37
0,125	3,00	49,44	46,46	7,90
0,090	3,47	6,89	6,47	1,43
0,075	3,74	0,36	0,34	1,09
0,063	3,99	0,08	0,08	1,01
< 0,063	> 3,99	1,08	1,01	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	1,01
Sand, fine (0,063 mm - 0,200 mm)	63,05
Sand, medium (0,2 mm - 0,6 mm)	33,93
Sand, coarse (0,6 mm - 2 mm)	1,07
Gravel (> 2 mm)	0,93
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,34	1,56
16%	84%	0,24	2,05
25%	75%	0,22	2,17
40%	60%	0,19	2,38
Median 50%	50%	0,17	2,52
75%	25%	0,15	2,78
84%	16%	0,13	2,89
90%	10%	0,13	2,97
95%	5%	0,11	3,19

## Moments Statistics

Mean	2,49
Sorting	0,46
Skewness	-0,14
Kurtosis	1,08
Uniformity Coefficient	1,50

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

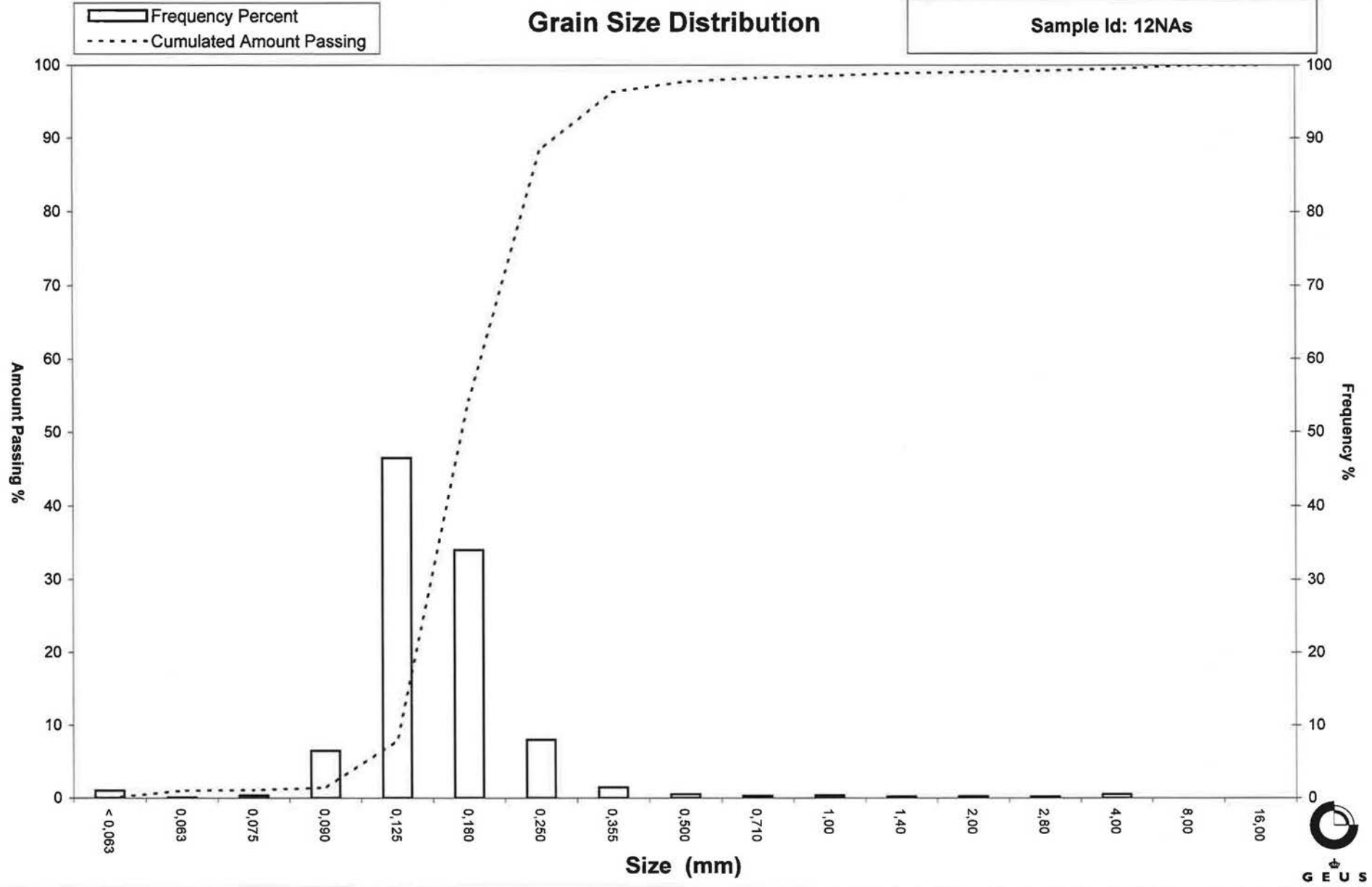
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12NAs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12NBs  
**Lab. Id:** 120196  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 114,38 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,23	1,08	98,92
4,00	-2,00	0,61	0,53	98,39
2,80	-1,49	0,40	0,35	98,04
2,00	-1,00	0,20	0,17	97,87
1,40	-0,49	0,19	0,17	97,70
1,00	0,00	0,36	0,31	97,39
0,710	0,49	0,26	0,23	97,16
0,500	1,00	0,53	0,46	96,70
0,355	1,49	1,66	1,45	95,24
0,250	2,00	9,42	8,24	87,01
0,180	2,47	38,66	33,80	53,21
0,125	3,00	52,39	45,80	7,41
0,090	3,47	7,01	6,13	1,28
0,075	3,74	0,33	0,29	0,99
0,063	3,99	0,08	0,07	0,92
< 0,063	> 3,99	1,05	0,92	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	0,92
Sand, fine (0,063 mm - 0,200 mm):	61,95
Sand, medium (0,2 mm - 0,6 mm):	34,05
Sand, coarse (0,6 mm - 2 mm):	0,95
Gravel (> 2 mm):	2,13
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,35	1,51
16%	84%	0,24	2,04
25%	75%	0,23	2,15
40%	60%	0,19	2,37
Median 50%	50%	0,18	2,51
75%	25%	0,15	2,77
84%	16%	0,14	2,89
90%	10%	0,13	2,96
95%	5%	0,11	3,17

## Moments Statistics

Mean	2,48
Sorting	0,46
Skewness	-0,15
Kurtosis	1,09
Uniformity Coefficient	1,51

The analysis is executed according to DS405.9  
 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles  
 are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

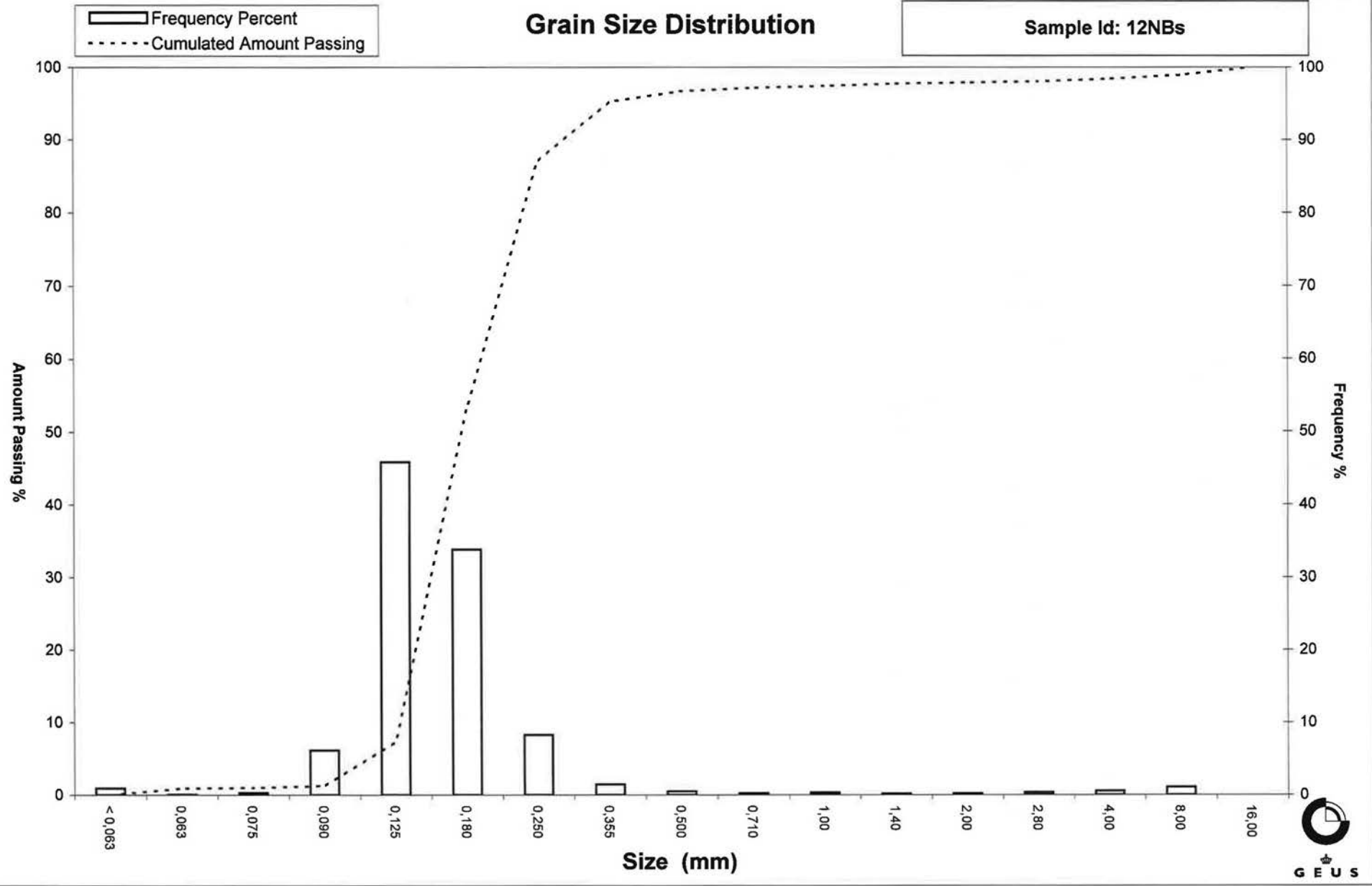
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12NBs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12NCs  
**Lab. Id:** 120197  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 123,93 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	2,53	2,04	97,96
2,80	-1,49	0,83	0,67	97,29
2,00	-1,00	0,52	0,42	96,87
1,40	-0,49	0,38	0,31	96,56
1,00	0,00	0,51	0,41	96,15
0,710	0,49	0,39	0,31	95,84
0,500	1,00	0,61	0,49	95,34
0,355	1,49	1,89	1,53	93,82
0,250	2,00	8,90	7,18	86,64
0,180	2,47	35,29	28,48	58,16
0,125	3,00	61,82	49,88	8,28
0,090	3,47	8,88	7,17	1,11
0,075	3,74	0,35	0,28	0,83
0,063	3,99	0,09	0,07	0,76
< 0,063	> 3,99	0,94	0,76	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	0,76
Sand, fine (0,063 mm - 0,200 mm):	65,54
Sand, medium (0,2 mm - 0,6 mm):	29,28
Sand, coarse (0,6 mm - 2 mm):	1,29
Gravel (> 2 mm):	3,13
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,47	1,10
16%	84%	0,24	2,04
25%	75%	0,22	2,18
40%	60%	0,18	2,44
Median 50%	50%	0,17	2,55
75%	25%	0,14	2,80
84%	16%	0,13	2,90
90%	10%	0,13	2,98
95%	5%	0,11	3,20

## Moments Statistics

Mean	2,50
Sorting	0,53
Skewness	-0,28
Kurtosis	1,37
Uniformity Coefficient	1,45

The analysis is executed according to DS405.9  
 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles  
 are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

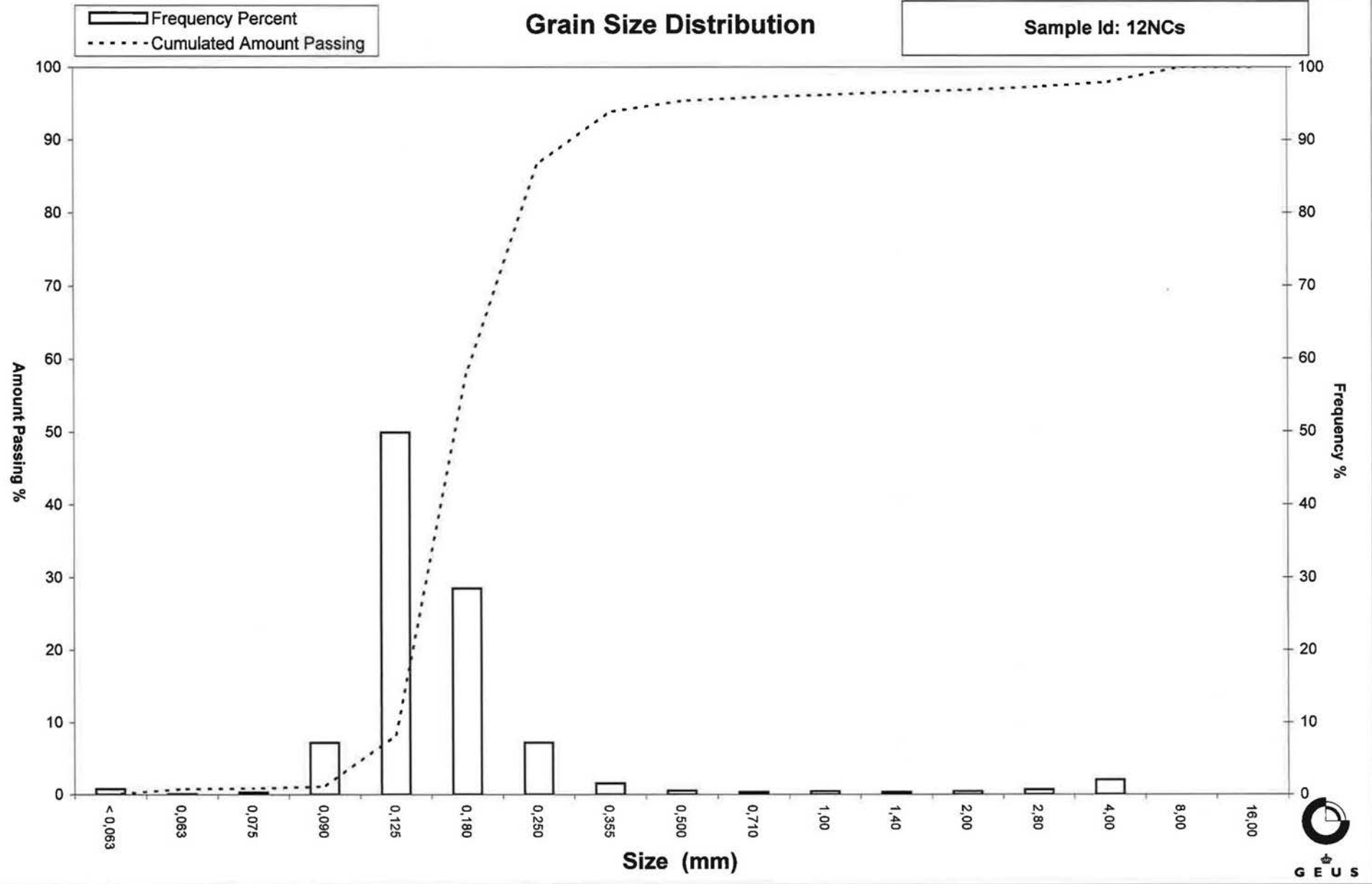
Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12NCs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12NDs  
**Lab. Id:** 120198  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 126,89 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount
mm	φ	g	%	amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	7,52	5,93	94,07
4,00	-2,00	4,32	3,40	90,67
2,80	-1,49	1,49	1,17	89,49
2,00	-1,00	0,72	0,57	88,93
1,40	-0,49	0,64	0,50	88,42
1,00	0,00	0,58	0,46	87,97
0,710	0,49	0,49	0,39	87,58
0,500	1,00	0,78	0,61	86,97
0,355	1,49	2,39	1,88	85,08
0,250	2,00	12,35	9,73	75,35
0,180	2,47	37,02	29,17	46,17
0,125	3,00	50,24	39,59	6,58
0,090	3,47	6,74	5,31	1,27
0,075	3,74	0,41	0,32	0,95
0,063	3,99	0,12	0,09	0,85
< 0,063	> 3,99	1,08	0,85	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm):	0,85
Sand, fine (0,063 mm - 0,200 mm):	53,66
Sand, medium (0,2 mm - 0,6 mm):	32,75
Sand, coarse (0,6 mm - 2 mm):	1,67
Gravel (> 2 mm):	11,07
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	φ
Amount in sieve	Amount passing		
5%	95%	9,25	-3,21
16%	84%	0,34	1,54
25%	75%	0,25	2,00
40%	60%	0,21	2,23
Median 50%	50%	0,19	2,40
75%	25%	0,15	2,73
84%	16%	0,14	2,86
90%	10%	0,13	2,95
95%	5%	0,11	3,13

## Moments Statistics

Mean	2,27
Sorting	1,29
Skewness	-0,54
Kurtosis	3,57
Uniformity Coefficient	1,64

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the 1/4 phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

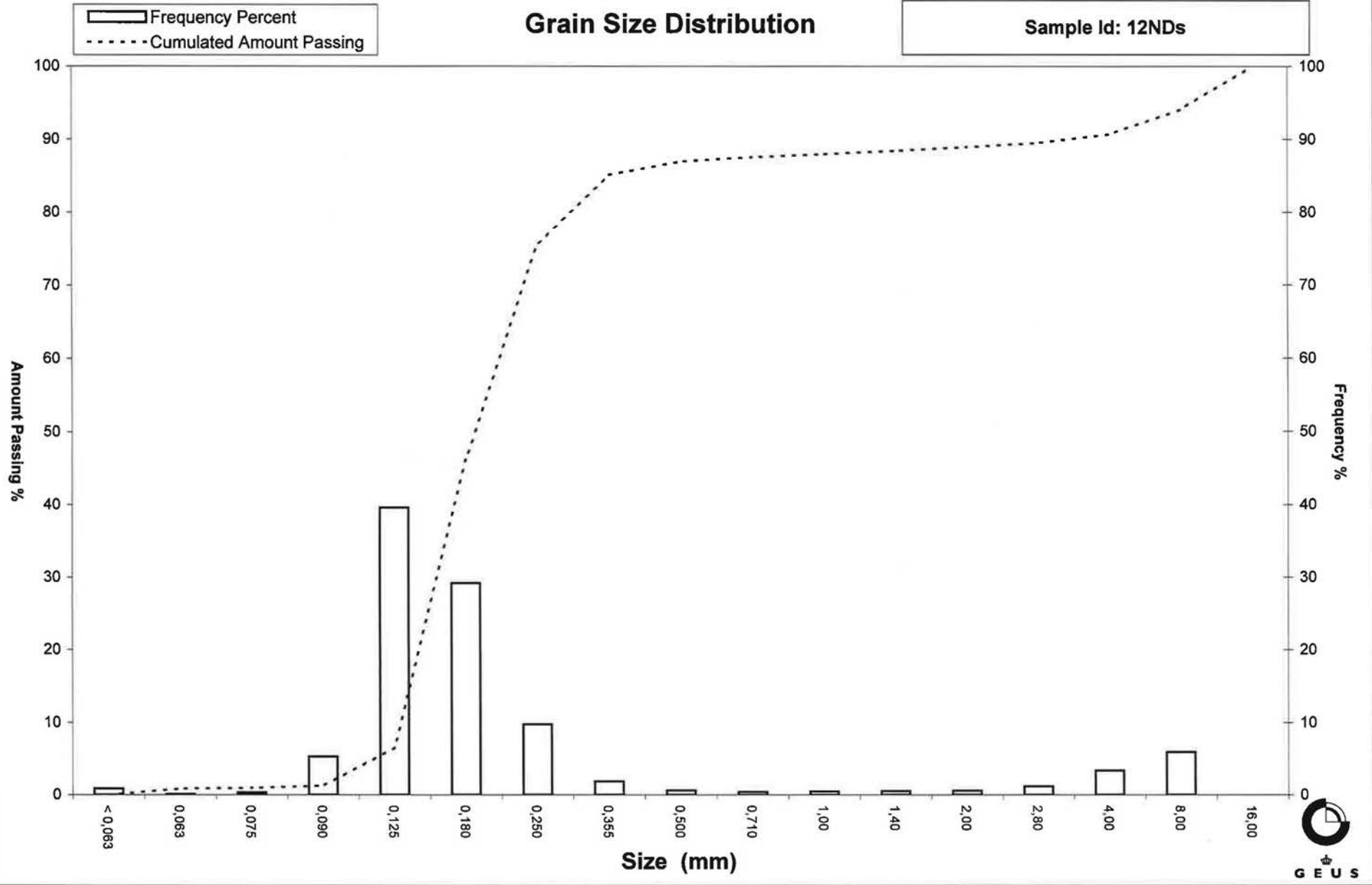
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12NDs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12NEs  
**Lab. Id:** 120199  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 114,38 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount
mm	Φ	g	%	amount passing
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	1,45	1,27	98,73
2,80	-1,49	0,42	0,37	98,37
2,00	-1,00	0,30	0,26	98,10
1,40	-0,49	0,21	0,18	97,92
1,00	0,00	0,32	0,28	97,64
0,710	0,49	0,25	0,22	97,42
0,500	1,00	0,51	0,45	96,97
0,355	1,49	1,31	1,15	95,83
0,250	2,00	7,06	6,17	89,66
0,180	2,47	34,36	30,04	59,62
0,125	3,00	58,33	51,00	8,62
0,090	3,47	8,98	7,85	0,77
0,075	3,74	0,59	0,52	0,25
0,063	3,99	0,16	0,14	0,11
< 0,063	> 3,99	0,13	0,11	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	0,11
Sand, fine (0,063 mm - 0,200 mm)	68,09
Sand, medium (0,2 mm - 0,6 mm)	28,99
Sand, coarse (0,6 mm - 2 mm)	0,92
Gravel (> 2 mm)	1,90
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,34	1,55
16%	84%	0,24	2,08
25%	75%	0,22	2,21
40%	60%	0,18	2,47
Median 50%	50%	0,17	2,56
75%	25%	0,14	2,81
84%	16%	0,13	2,91
90%	10%	0,13	2,98
95%	5%	0,11	3,20

## Moments Statistics

Mean	2,52
Sorting	0,46
Skewness	-0,19
Kurtosis	1,13
Uniformity Coefficient	1,43

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

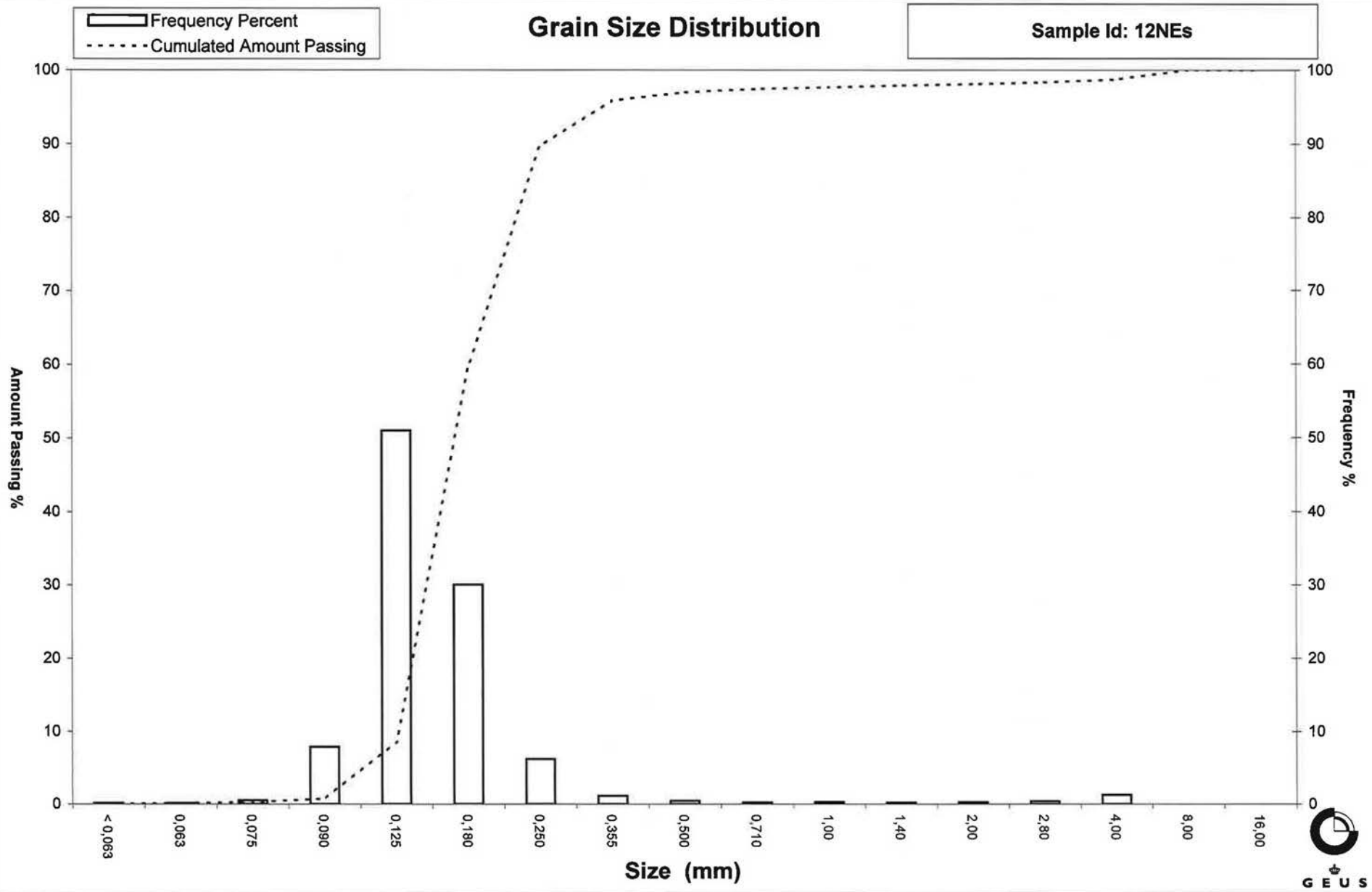
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12NEs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12NFs  
**Lab. Id:** 120200  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 112,67 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	2,55	2,26	97,74
2,80	-1,49	0,77	0,68	97,05
2,00	-1,00	0,52	0,46	96,59
1,40	-0,49	0,31	0,28	96,32
1,00	0,00	0,29	0,26	96,06
0,710	0,49	0,26	0,23	95,83
0,500	1,00	0,47	0,42	95,41
0,355	1,49	1,48	1,31	94,10
0,250	2,00	10,10	8,96	85,13
0,180	2,47	36,86	32,72	52,42
0,125	3,00	51,22	45,46	6,96
0,090	3,47	6,46	5,73	1,22
0,075	3,74	0,36	0,32	0,91
0,063	3,99	0,07	0,06	0,84
< 0,063	> 3,99	0,95	0,84	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	0,84
Sand, fine (0,063 mm - 0,200 mm)	60,92
Sand, medium (0,2 mm - 0,6 mm)	33,84
Sand, coarse (0,6 mm - 2 mm)	0,98
Gravel (> 2 mm)	3,41
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,45	1,14
16%	84%	0,25	2,01
25%	75%	0,23	2,13
40%	60%	0,20	2,35
Median 50%	50%	0,18	2,50
75%	25%	0,15	2,77
84%	16%	0,14	2,88
90%	10%	0,13	2,96
95%	5%	0,11	3,15

## Moments Statistics

Mean	2,46
Sorting	0,52
Skewness	-0,24
Kurtosis	1,29
Uniformity Coefficient	1,52

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

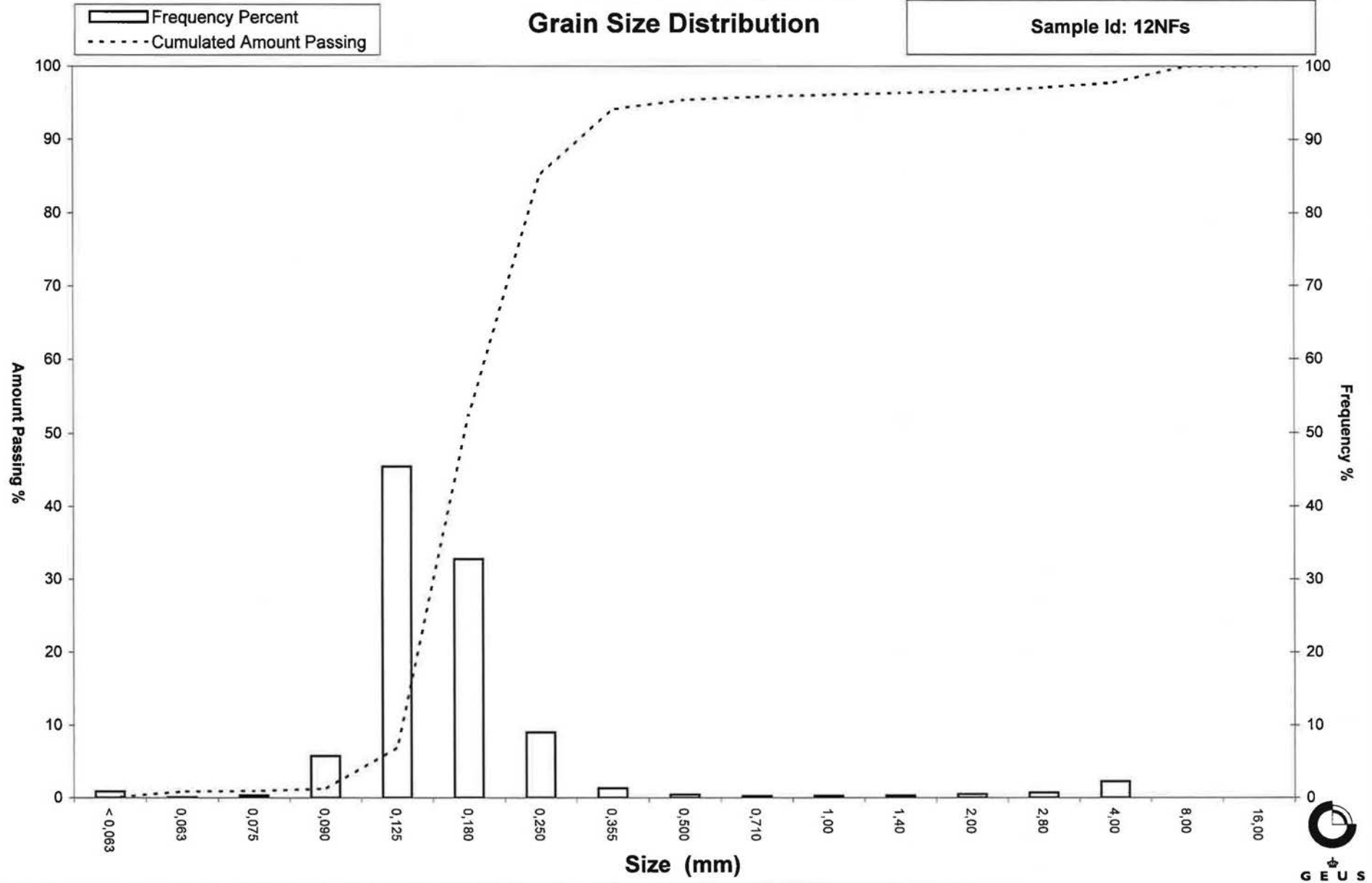
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12NFs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12NGs  
**Lab. Id:** 120201  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 130,07 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	8,90	6,84	93,16
4,00	-2,00	6,04	4,64	88,51
2,80	-1,49	2,67	2,05	86,46
2,00	-1,00	1,72	1,32	85,14
1,40	-0,49	0,96	0,74	84,40
1,00	0,00	1,08	0,83	83,57
0,710	0,49	0,70	0,54	83,03
0,500	1,00	1,05	0,81	82,22
0,355	1,49	2,49	1,91	80,31
0,250	2,00	11,84	9,10	71,21
0,180	2,47	39,76	30,57	40,64
0,125	3,00	45,70	35,13	5,50
0,090	3,47	5,57	4,28	1,22
0,075	3,74	0,37	0,28	0,94
0,063	3,99	0,09	0,07	0,87
< 0,063	> 3,99	1,13	0,87	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm):	0,87
Sand, fine (0,063 mm - 0,200 mm):	48,50
Sand, medium (0,2 mm - 0,6 mm):	33,24
Sand, coarse (0,6 mm - 2 mm):	2,53
Gravel (> 2 mm):	14,86
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	10,15	-3,34
16%	84%	1,21	-0,27
25%	75%	0,29	1,77
40%	60%	0,22	2,16
Median 50%	50%	0,20	2,31
75%	25%	0,16	2,68
84%	16%	0,14	2,82
90%	10%	0,13	2,92
95%	5%	0,12	3,05

## Moments Statistics

Mean	1,62
Sorting	1,74
Skewness	-0,72
Kurtosis	2,86
Uniformity Coefficient	1,70

The analysis is executed according to DS405.9  
 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles  
 are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

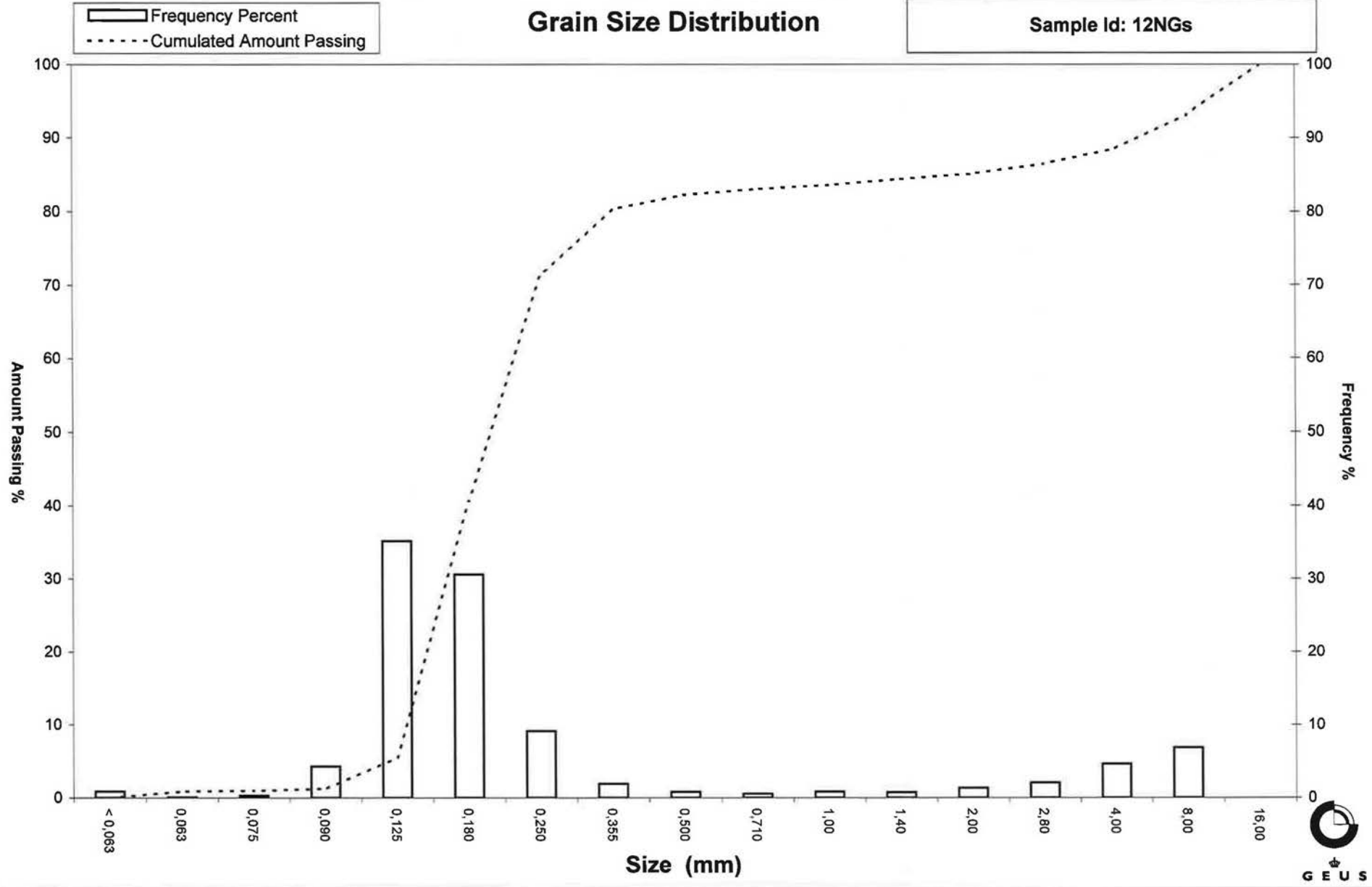
Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12NGs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12NHs  
**Lab. Id:** 120202  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 121,95 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,20	0,98	99,02
4,00	-2,00	3,06	2,51	96,51
2,80	-1,49	1,03	0,84	95,66
2,00	-1,00	0,54	0,44	95,22
1,40	-0,49	0,35	0,29	94,93
1,00	0,00	0,34	0,28	94,65
0,710	0,49	0,23	0,19	94,46
0,500	1,00	0,49	0,40	94,06
0,355	1,49	1,39	1,14	92,92
0,250	2,00	7,68	6,30	86,63
0,180	2,47	36,97	30,32	56,31
0,125	3,00	59,04	48,41	7,90
0,090	3,47	7,94	6,51	1,39
0,075	3,74	0,46	0,38	1,01
0,063	3,99	0,12	0,10	0,91
< 0,063	> 3,99	1,11	0,91	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	0,91
Sand, fine (0,063 mm - 0,200 mm):	64,06
Sand, medium (0,2 mm - 0,6 mm):	29,28
Sand, coarse (0,6 mm - 2 mm):	0,96
Gravel (> 2 mm):	4,78
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,54	-0,62
16%	84%	0,24	2,04
25%	75%	0,22	2,16
40%	60%	0,19	2,41
Median 50%	50%	0,17	2,53
75%	25%	0,14	2,79
84%	16%	0,13	2,90
90%	10%	0,13	2,97
95%	5%	0,11	3,19

## Moments Statistics

Mean	2,49
Sorting	0,79
Skewness	-0,40
Kurtosis	2,49
Uniformity Coefficient	1,48

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

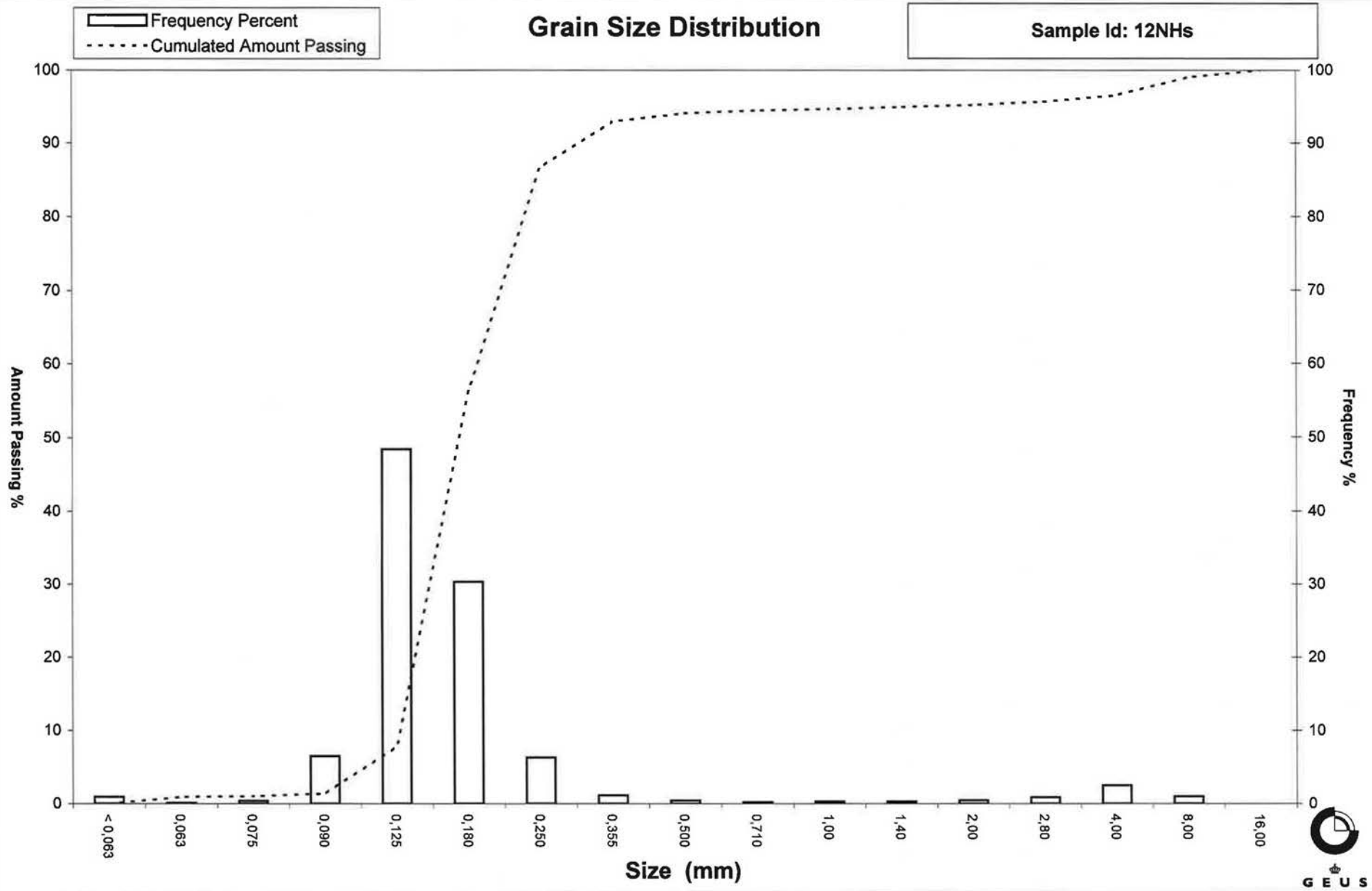
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12NHs



# Grain Size Distribution

## Geotechnical

**Sample Id:** 12KAs  
**Lab. Id:** 120203  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 132,08 g

### Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	5,51	4,17	95,83
4,00	-2,00	7,03	5,32	90,51
2,80	-1,49	2,04	1,54	88,96
2,00	-1,00	1,29	0,98	87,98
1,40	-0,49	1,39	1,05	86,93
1,00	0,00	1,16	0,88	86,05
0,710	0,49	0,72	0,55	85,51
0,500	1,00	0,90	0,68	84,83
0,355	1,49	2,07	1,57	83,26
0,250	2,00	10,62	8,04	75,22
0,180	2,47	35,51	26,89	48,33
0,125	3,00	53,76	40,70	7,63
0,090	3,47	8,37	6,34	1,29
0,075	3,74	0,52	0,39	0,90
0,063	3,99	0,12	0,09	0,81
< 0,063	> 3,99	1,07	0,81	0,00

Sieve Analysis

Gravel

Sand

### Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm):	0,81
Sand, fine (0,063 mm - 0,200 mm):	55,21
Sand, medium (0,2 mm - 0,6 mm):	29,14
Sand, coarse (0,6 mm - 2 mm):	2,83
Gravel (> 2 mm):	12,02
<b>Sum:</b>	<b>100,00</b>

### Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	7,38	-2,88
16%	84%	0,42	1,24
25%	75%	0,25	2,00
40%	60%	0,21	2,25
Median 50%	50%	0,18	2,44
75%	25%	0,15	2,75
84%	16%	0,14	2,88
90%	10%	0,13	2,96
95%	5%	0,11	3,18

### Moments Statistics

Mean	2,18
Sorting	1,33
Skewness	-0,61
Kurtosis	3,32
Uniformity Coefficient	1,64

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles are found by linear interpolation

### Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

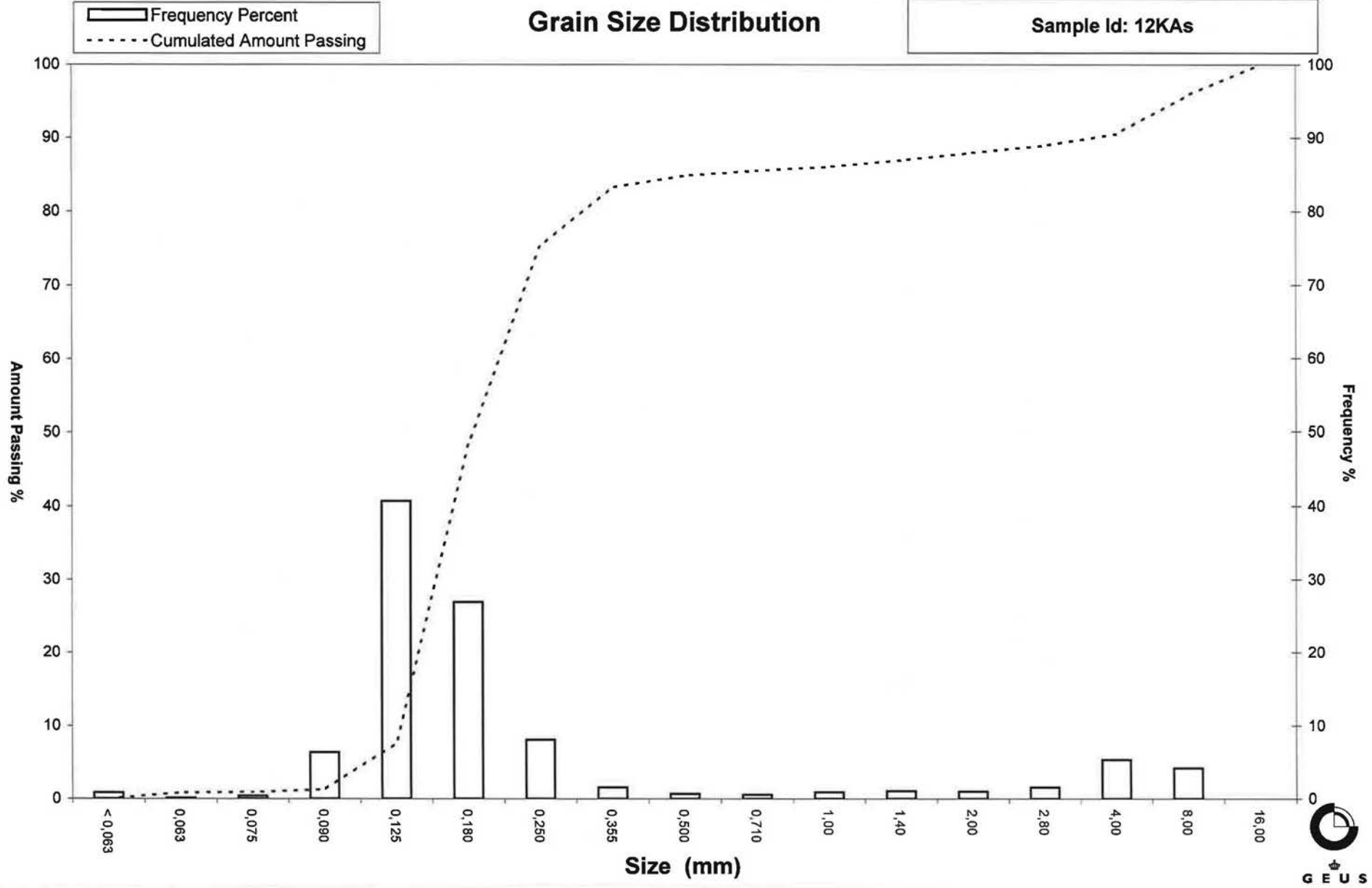
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12KAs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12KBs  
**Lab. Id:** 120204  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 121,11 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	3,23	2,67	97,33
2,80	-1,49	0,79	0,65	96,68
2,00	-1,00	0,63	0,52	96,16
1,40	-0,49	0,36	0,30	95,86
1,00	0,00	0,45	0,37	95,49
0,710	0,49	0,32	0,26	95,23
0,500	1,00	0,56	0,46	94,77
0,355	1,49	1,79	1,48	93,29
0,250	2,00	9,78	8,08	85,21
0,180	2,47	34,88	28,80	56,41
0,125	3,00	56,69	46,81	9,60
0,090	3,47	9,83	8,12	1,49
0,075	3,74	0,57	0,47	1,02
0,063	3,99	0,14	0,12	0,90
< 0,063	> 3,99	1,09	0,90	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	0,90
Sand, fine (0,063 mm - 0,200 mm)	63,74
Sand, medium (0,2 mm - 0,6 mm)	30,35
Sand, coarse (0,6 mm - 2 mm)	1,18
Gravel (> 2 mm)	3,84
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,61	0,72
16%	84%	0,25	2,02
25%	75%	0,23	2,15
40%	60%	0,19	2,41
Median 50%	50%	0,17	2,54
75%	25%	0,14	2,80
84%	16%	0,13	2,92
90%	10%	0,13	2,99
95%	5%	0,11	3,25

## Moments Statistics

Mean	2,49
Sorting	0,61
Skewness	-0,29
Kurtosis	1,58
Uniformity Coefficient	1,50

The analysis is executed according to DS405.9  
 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles  
 are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

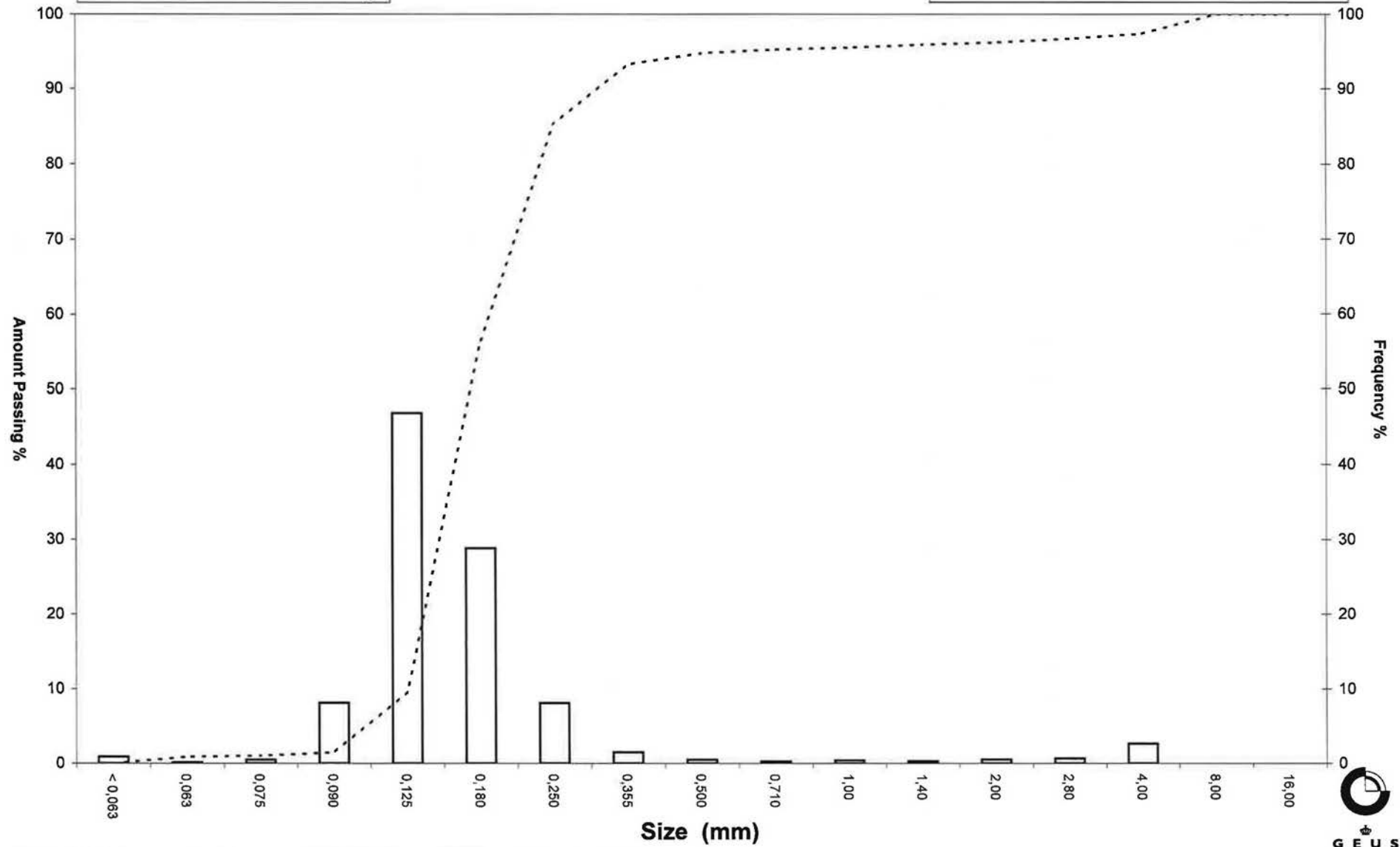
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12KBs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12KCs  
**Lab. Id:** 120205  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 124,07 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,93	2,36	97,64
4,00	-2,00	3,88	3,13	94,51
2,80	-1,49	1,09	0,88	93,63
2,00	-1,00	1,02	0,82	92,81
1,40	-0,49	0,51	0,41	92,40
1,00	0,00	0,88	0,71	91,69
0,710	0,49	0,53	0,43	91,26
0,500	1,00	0,97	0,78	90,48
0,355	1,49	2,28	1,84	88,64
0,250	2,00	10,45	8,42	80,22
0,180	2,47	40,42	32,58	47,64
0,125	3,00	51,02	41,12	6,52
0,090	3,47	6,31	5,09	1,43
0,075	3,74	0,44	0,35	1,08
0,063	3,99	0,10	0,08	1,00
< 0,063	> 3,99	1,24	1,00	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	1,00
Sand, fine (0,063 mm - 0,200 mm)	55,95
Sand, medium (0,2 mm - 0,6 mm)	33,90
Sand, coarse (0,6 mm - 2 mm)	1,96
Gravel (> 2 mm)	7,19
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	4,63	-2,21
16%	84%	0,30	1,75
25%	75%	0,24	2,07
40%	60%	0,21	2,28
Median 50%	50%	0,19	2,43
75%	25%	0,15	2,74
84%	16%	0,14	2,86
90%	10%	0,13	2,95
95%	5%	0,11	3,13

## Moments Statistics

Mean	2,35
Sorting	1,09
Skewness	-0,49
Kurtosis	3,25
Uniformity Coefficient	1,59

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

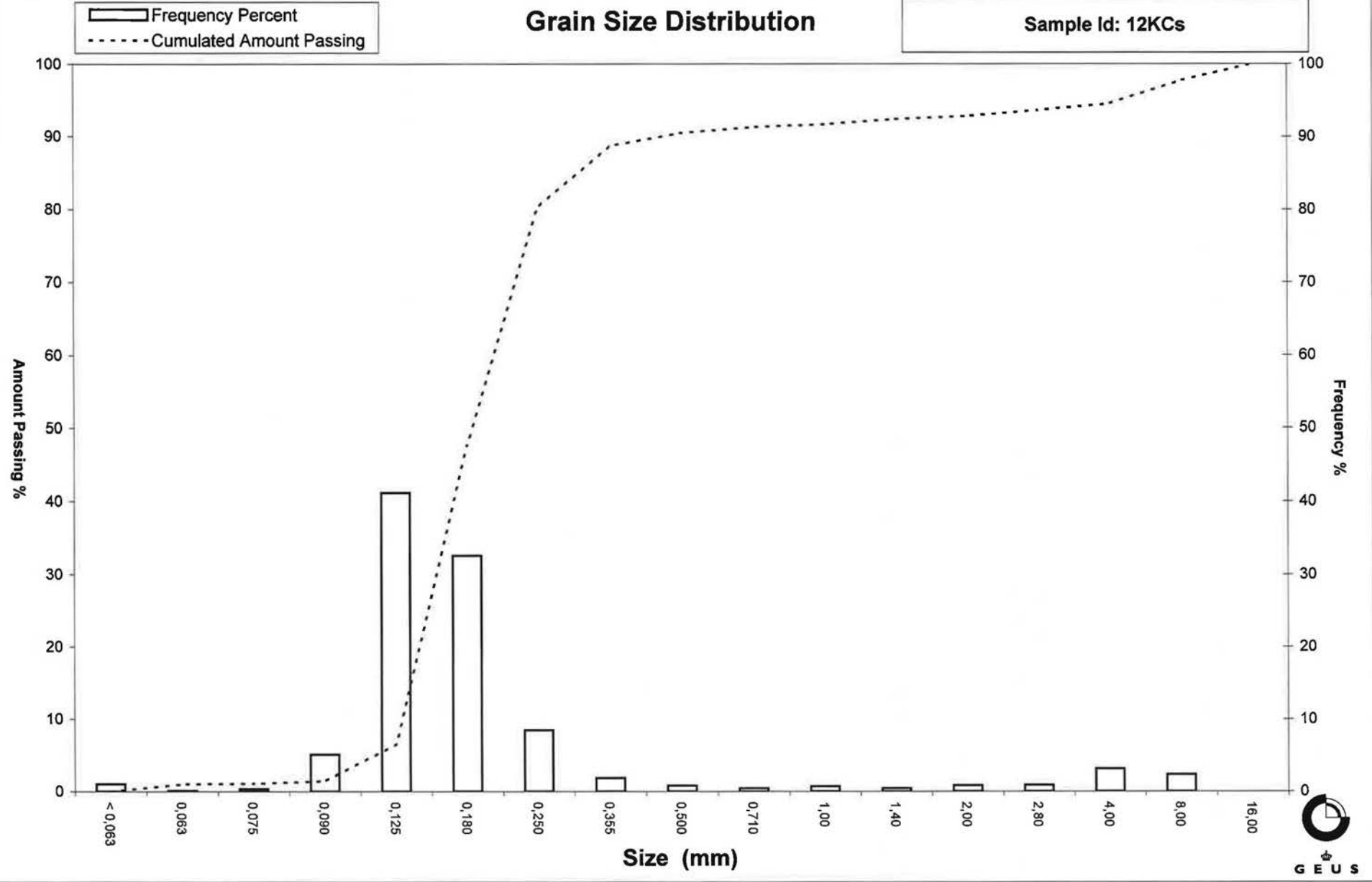
Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12KCs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12KDs  
**Lab. Id:** 120206  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 127,26 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	2,21	1,74	98,26
2,80	-1,49	0,84	0,66	97,60
2,00	-1,00	0,51	0,40	97,20
1,40	-0,49	0,34	0,27	96,94
1,00	0,00	0,47	0,37	96,57
0,710	0,49	0,30	0,24	96,33
0,500	1,00	0,51	0,40	95,93
0,355	1,49	1,27	1,00	94,93
0,250	2,00	7,04	5,53	89,40
0,180	2,47	37,95	29,82	59,58
0,125	3,00	64,07	50,35	9,23
0,090	3,47	9,66	7,59	1,64
0,075	3,74	0,59	0,46	1,18
0,063	3,99	0,18	0,14	1,04
< 0,063	> 3,99	1,32	1,04	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm):	1,04
Sand, fine (0,063 mm - 0,200 mm):	67,06
Sand, medium (0,2 mm - 0,6 mm):	28,02
Sand, coarse (0,6 mm - 2 mm):	1,08
Gravel (> 2 mm):	2,80
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,36	1,45
16%	84%	0,24	2,08
25%	75%	0,22	2,21
40%	60%	0,18	2,47
Median 50%	50%	0,17	2,56
75%	25%	0,14	2,81
84%	16%	0,13	2,92
90%	10%	0,13	2,99
95%	5%	0,11	3,24

## Moments Statistics

Mean	2,52
Sorting	0,48
Skewness	-0,19
Kurtosis	1,21
Uniformity Coefficient	1,44

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

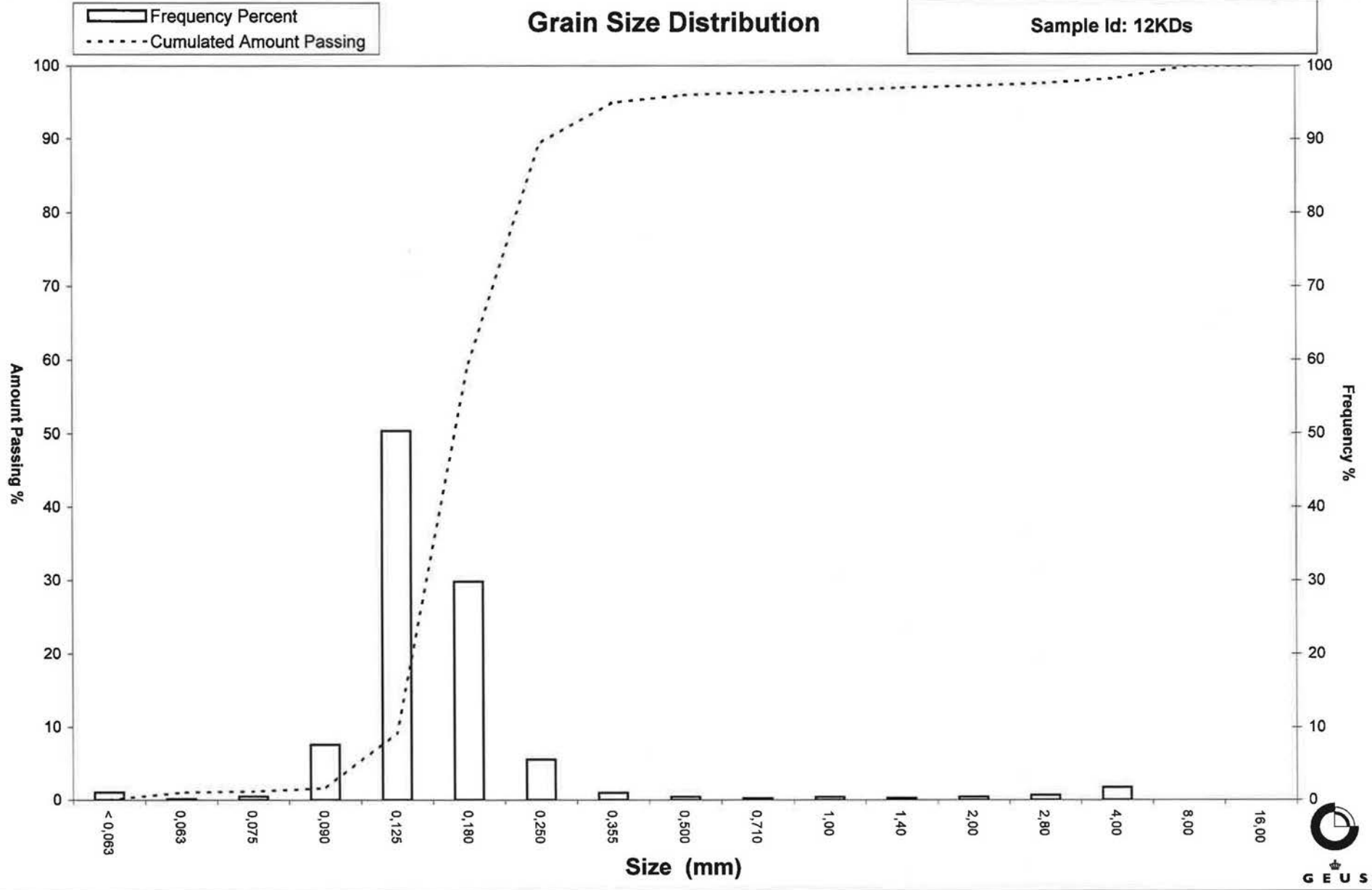
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12KDs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12KEs  
**Lab. Id:** 120207  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 142,09 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,66	0,46	99,54
2,80	-1,49	0,16	0,11	99,42
2,00	-1,00	0,22	0,15	99,27
1,40	-0,49	0,11	0,08	99,19
1,00	0,00	0,14	0,10	99,09
0,710	0,49	0,15	0,11	98,99
0,500	1,00	0,28	0,20	98,79
0,355	1,49	1,03	0,72	98,06
0,250	2,00	9,30	6,55	91,52
0,180	2,47	46,90	33,01	58,51
0,125	3,00	71,16	50,08	8,43
0,090	3,47	9,79	6,89	1,54
0,075	3,74	0,44	0,31	1,23
0,063	3,99	0,12	0,08	1,15
< 0,063	> 3,99	1,63	1,15	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	1,15
Sand, fine (0,063 mm - 0,200 mm)	66,80
Sand, medium (0,2 mm - 0,6 mm)	30,94
Sand, coarse (0,6 mm - 2 mm)	0,38
Gravel (> 2 mm)	0,73
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,31	1,71
16%	84%	0,23	2,10
25%	75%	0,21	2,22
40%	60%	0,18	2,45
Median 50%	50%	0,17	2,55
75%	25%	0,14	2,80
84%	16%	0,13	2,91
90%	10%	0,13	2,98
95%	5%	0,11	3,22

## Moments Statistics

Mean	2,52
Sorting	0,43
Skewness	-0,12
Kurtosis	1,05
Uniformity Coefficient	1,45

The analysis is executed according to DS405.9  
 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles  
 are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

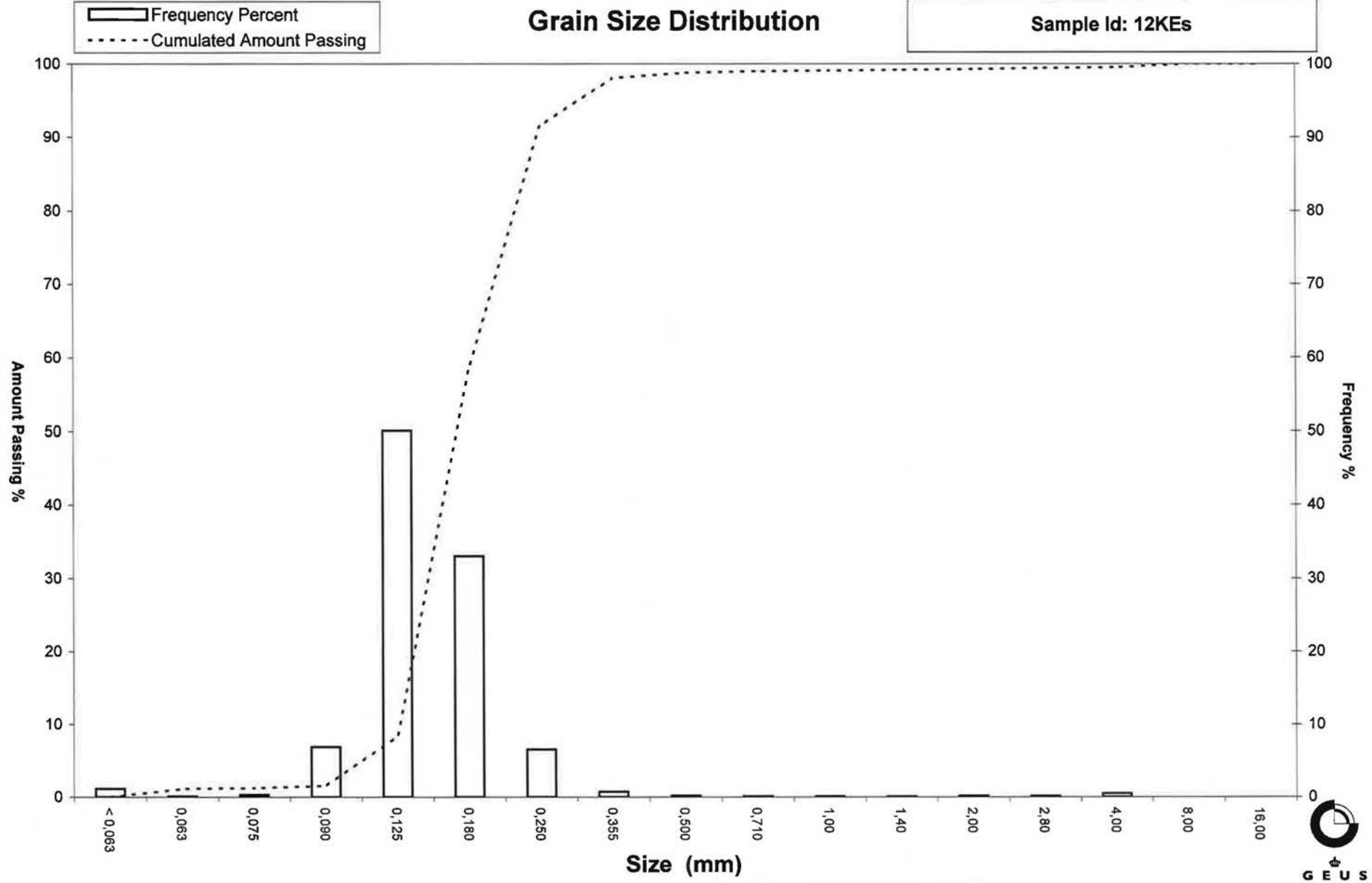
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12KEs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12KFs  
**Lab. Id:** 120208  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 123,93 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,10	1,69	98,31
4,00	-2,00	1,60	1,29	97,01
2,80	-1,49	0,60	0,48	96,53
2,00	-1,00	0,45	0,36	96,17
1,40	-0,49	0,25	0,20	95,97
1,00	0,00	0,45	0,36	95,60
0,710	0,49	0,30	0,24	95,36
0,500	1,00	0,54	0,44	94,92
0,355	1,49	1,25	1,01	93,92
0,250	2,00	7,88	6,36	87,56
0,180	2,47	39,98	32,26	55,30
0,125	3,00	59,90	48,33	6,96
0,090	3,47	7,21	5,82	1,15
0,075	3,74	0,41	0,33	0,81
0,063	3,99	0,10	0,08	0,73
< 0,063	> 3,99	0,91	0,73	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	0,73
Sand, fine (0,063 mm - 0,200 mm):	63,78
Sand, medium (0,2 mm - 0,6 mm):	30,62
Sand, coarse (0,6 mm - 2 mm):	1,04
Gravel (> 2 mm):	3,83
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,54	0,90
16%	84%	0,24	2,05
25%	75%	0,22	2,17
40%	60%	0,19	2,39
Median 50%	50%	0,17	2,52
75%	25%	0,15	2,78
84%	16%	0,14	2,89
90%	10%	0,13	2,96
95%	5%	0,11	3,14

## Moments Statistics

Mean	2,48
Sorting	0,55
Skewness	-0,29
Kurtosis	1,50
Uniformity Coefficient	1,48

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

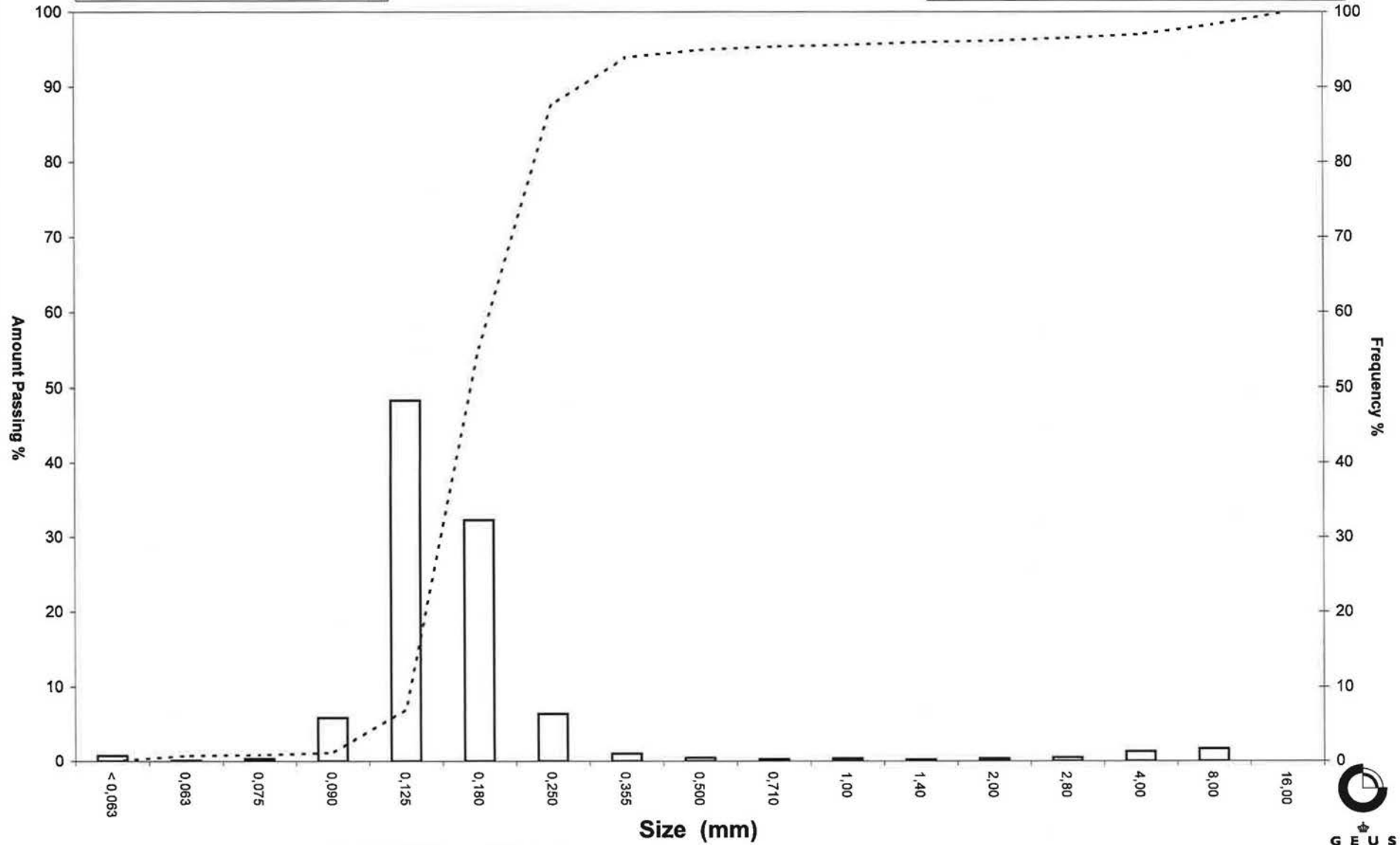
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12KFs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12KGs  
**Lab. Id:** 120209  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 137,23 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	5,08	3,70	96,30
4,00	-2,00	3,22	2,35	93,95
2,80	-1,49	1,13	0,82	93,13
2,00	-1,00	0,74	0,54	92,59
1,40	-0,49	0,73	0,53	92,06
1,00	0,00	0,52	0,38	91,68
0,710	0,49	0,46	0,34	91,34
0,500	1,00	0,87	0,63	90,71
0,355	1,49	2,54	1,85	88,86
0,250	2,00	14,62	10,65	78,20
0,180	2,47	47,22	34,41	43,80
0,125	3,00	52,49	38,25	5,55
0,090	3,47	5,83	4,25	1,30
0,075	3,74	0,30	0,22	1,08
0,063	3,99	0,09	0,07	1,01
< 0,063	> 3,99	1,39	1,01	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	1,01
Sand, fine (0,063 mm - 0,200 mm)	52,61
Sand, medium (0,2 mm - 0,6 mm)	37,38
Sand, coarse (0,6 mm - 2 mm)	1,58
Gravel (> 2 mm)	7,41
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	5,79	-2,53
16%	84%	0,31	1,70
25%	75%	0,24	2,04
40%	60%	0,21	2,23
<b>Median 50%</b>	<b>50%</b>	<b>0,19</b>	<b>2,38</b>
75%	25%	0,15	2,71
84%	16%	0,14	2,84
90%	10%	0,13	2,93
95%	5%	0,12	3,05

## Moments Statistics

Mean	2,31
Sorting	1,13
Skewness	-0,47
Kurtosis	3,41
Uniformity Coefficient	1,62

The analysis is executed according to DS405.9  
 DS/EN933-1 extended by sieves to the ½ phi scale.

Size Classes and Percentiles  
 are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

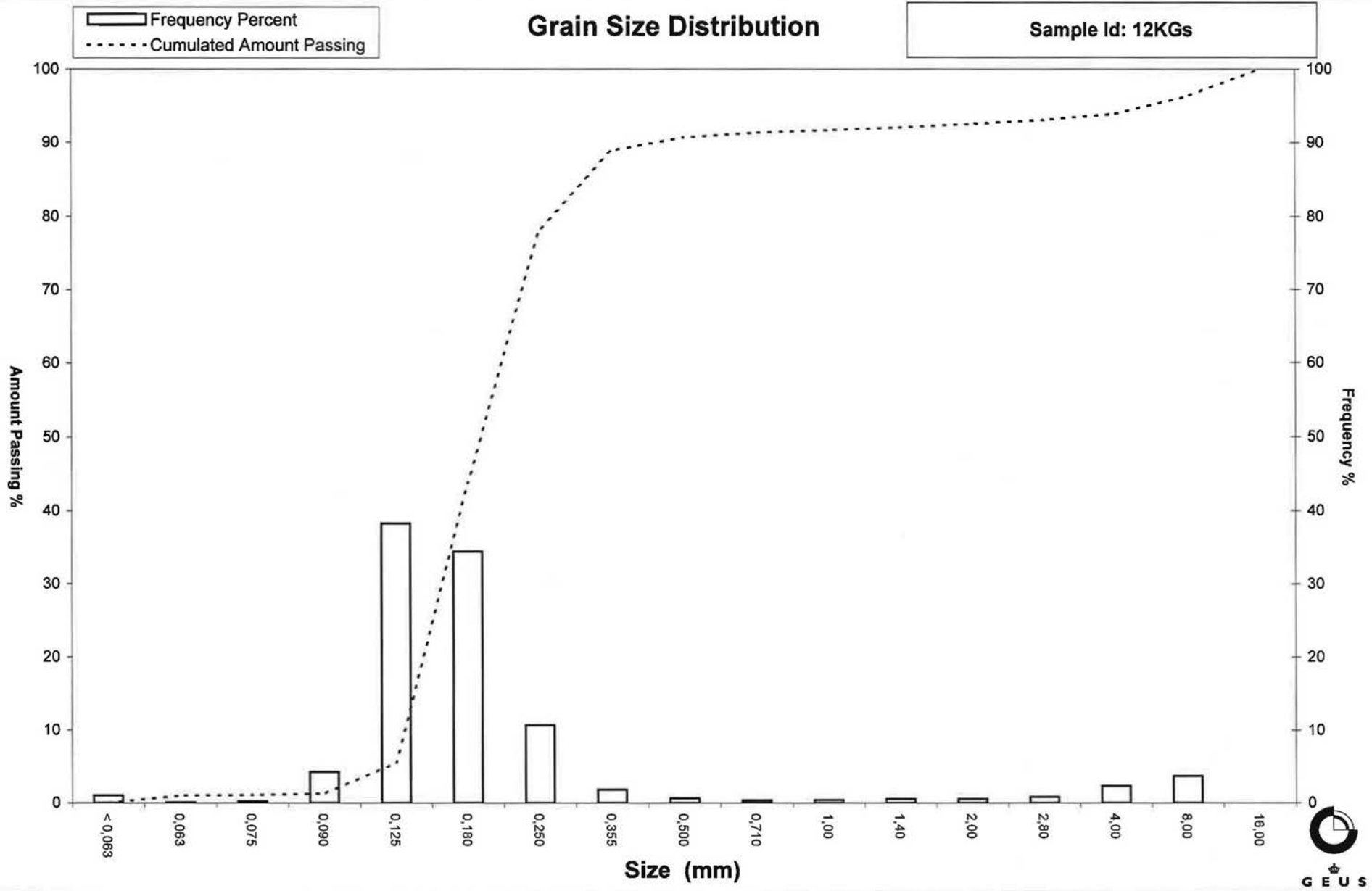
Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12KGs



# Grain Size Distribution

Geotechnical

**Sample Id:** 12KHs  
**Lab. Id:** 120210  
**Submitter:** DTU Aqua  
**Subject:** Dogger Bank juni 2012  
**Date:** Oktober 2012  
**Executed:** Ingerlise Nørgaard  
**Remarks:** For mat. < 2 mm. Mat > 1,4 overvejende skaller



**Total Weight** 122,05 g

## Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,23	1,83	98,17
4,00	-2,00	5,71	4,68	93,49
2,80	-1,49	1,85	1,52	91,98
2,00	-1,00	1,23	1,01	90,97
1,40	-0,49	0,81	0,66	90,31
1,00	0,00	0,86	0,70	89,60
0,710	0,49	0,55	0,45	89,15
0,500	1,00	0,82	0,67	88,48
0,355	1,49	2,07	1,70	86,78
0,250	2,00	11,04	9,05	77,74
0,180	2,47	36,96	30,28	47,46
0,125	3,00	49,57	40,61	6,84
0,090	3,47	6,68	5,47	1,37
0,075	3,74	0,42	0,34	1,02
0,063	3,99	0,12	0,10	0,93
< 0,063	> 3,99	1,13	0,93	0,00

Sieve Analysis

Gravel

Sand

## Size Classes (DGF-Bulletin 1 1988)

Size Class	Weight %
Silt and clay (< 0,063 mm)	0,93
Sand, fine (0,063 mm - 0,200 mm)	55,18
Sand, medium (0,2 mm - 0,6 mm)	32,69
Sand, coarse (0,6 mm - 2 mm)	2,17
Gravel (> 2 mm)	9,03
<b>Sum:</b>	<b>100,00</b>

## Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	φ
Amount in sieve	Amount passing		
5%	95%	5,29	-2,40
16%	84%	0,32	1,63
25%	75%	0,24	2,04
40%	60%	0,21	2,26
Median 50%	50%	0,19	2,43
75%	25%	0,15	2,74
84%	16%	0,14	2,86
90%	10%	0,13	2,95
95%	5%	0,11	3,14

## Moments Statistics

Mean	2,31
Sorting	1,15
Skewness	-0,52
Kurtosis	3,23
Uniformity Coefficient	1,62

The analysis is executed according to DS405.9 DS/EN933-1 extended by sieves to the 1/2 phi scale.

Size Classes and Percentiles are found by linear interpolation

## Formulas

Mean  $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$  (Folk and Ward 1957)

Sorting  $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$  (Folk and Ward 1957)

Kurtosis  $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$  (Folk and Ward 1957)

Skewness  $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$  (Folk and Ward 1957)

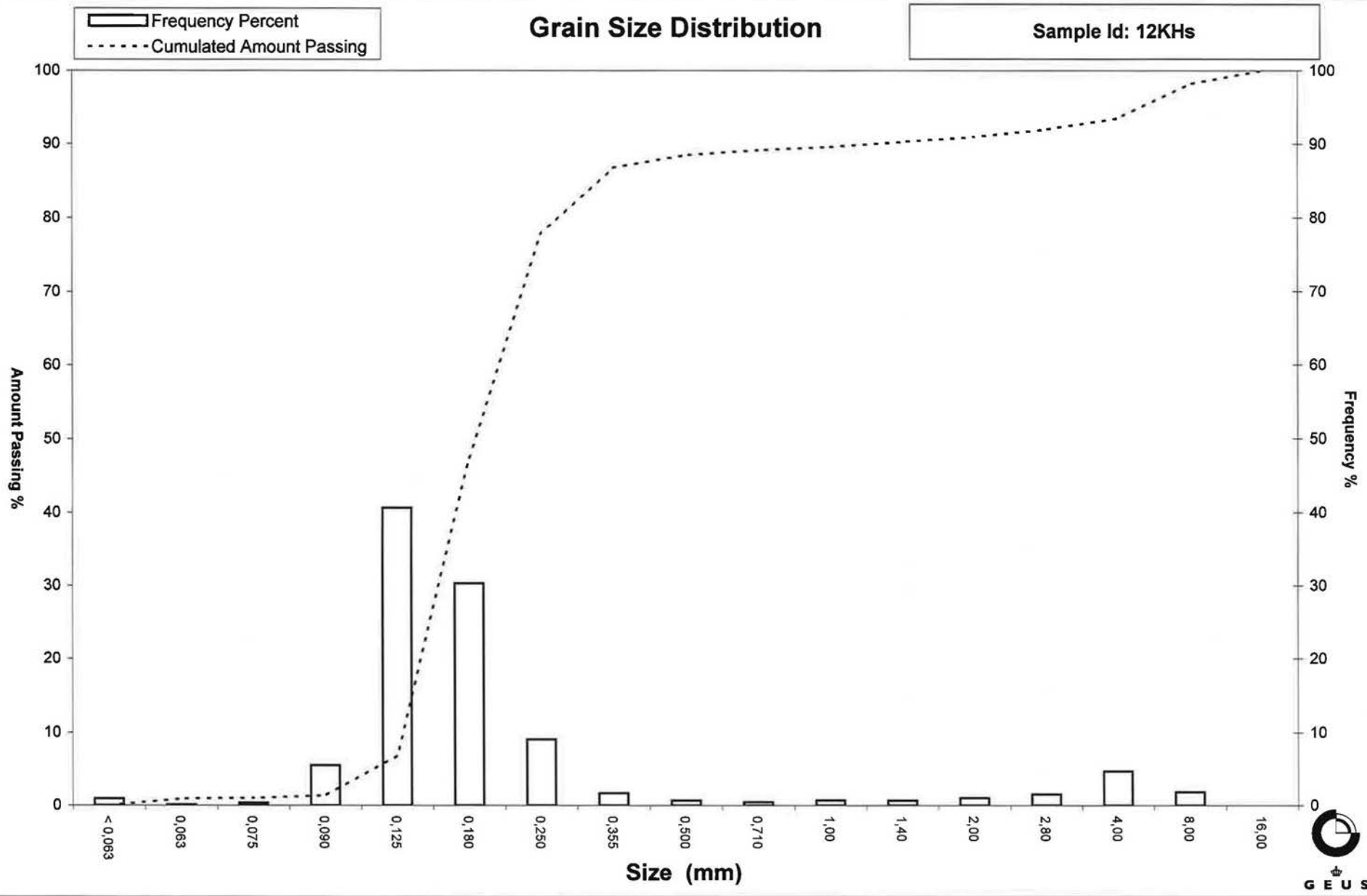
Uniformity Coefficient  $(d_{60\%} / d_{10\%})$  (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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# Grain Size Distribution

Sample Id: 12KHs



## Dogger Bank juni 2012

Glødetab DS 204

Sample	Glødetab i %
12OAs	0,97
12OBs	0,56
12OCs	0,62
12ODs	0,60
12OEs	0,91
12OFs	1,36
12OGs	1,16
12OHs	1,24
12OXs	0,43
12NAs	0,69
12NBs	0,42
12NCs	0,57
12NDs	1,09
12NEs	1,08
12NFs	0,75
12NGs	1,56
12NHs	0,65
12KAs	0,78
12KBs	0,69
12KCs	0,50
12KDc	0,41
12KEs	0,33
12KFs	0,45
12KGs	0,37
12KHs	1,74

okt.2012