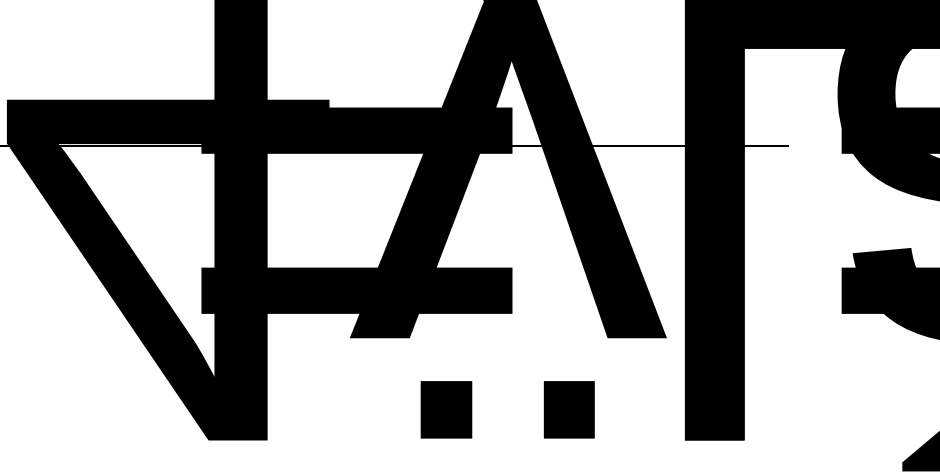

2015 1674 ≤ 60

2022 8 2023 1 1 1674

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m0m "

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2.1 7
2.2 7
2.3 7
2.4 15
2.5 15
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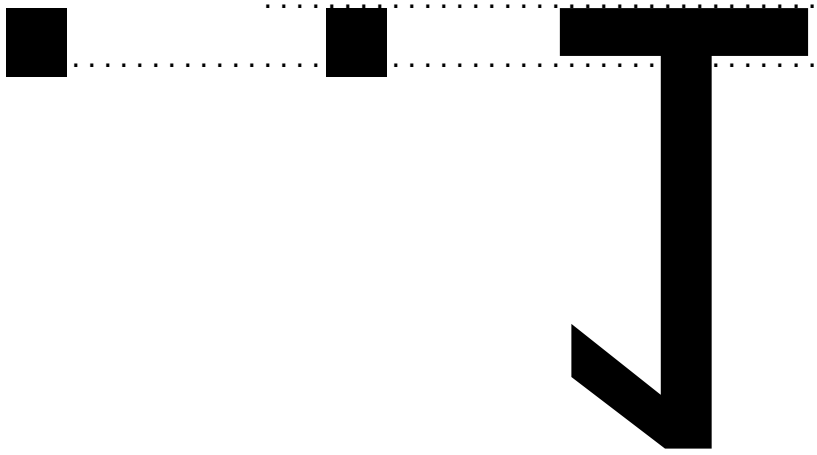

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2016 11 2016 7 6

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2018 21

2018 8 31

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1 GB50156-2021

2 GB 6944-2025

3 GB 12268-2025

4 GB 18218-2018

5 GB 17914-2013

6 GB 55036-2022)

7 GB 50058-2014

8 AQ 3009-2007

9 GB/T 6441-2025

10 GB/T 13861-2022

11 GB 50016-2014 2018

12 GB 50140-2005

13 GB 55037-2022

14 GB 50057-2010

15 GB 12158-2024

16 GB/T 50610-2010

17 GB20952-2020

18 GB 50395-2007

19 GB/T 29639-2020

20 (GB/T12801-2025)

21 (GB 5083-2023)

22 YJ/T 9007-2019

23 (AQ 3010-2022)

24 AQ 3018-2008

25 GB30871-2022

26 XF/T 3004-2020

27 - SH/T 3178-2015

28 GB/T 13869-2017

29 AQ 8001-2007

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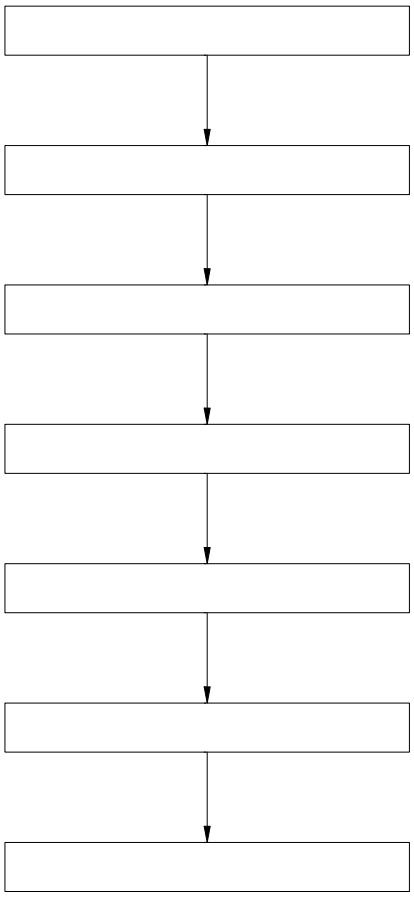

1 1

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1891m^2 SF 4 1 1

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4 2 30m^3 2 30m^3

GB50156-2021 3.0.9

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2.1

21.5m 1 H=6m

15.9m 13m 352 2 H=6m

H=8m 12m 11m 23.2m

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-28.2

28.2

-15.7

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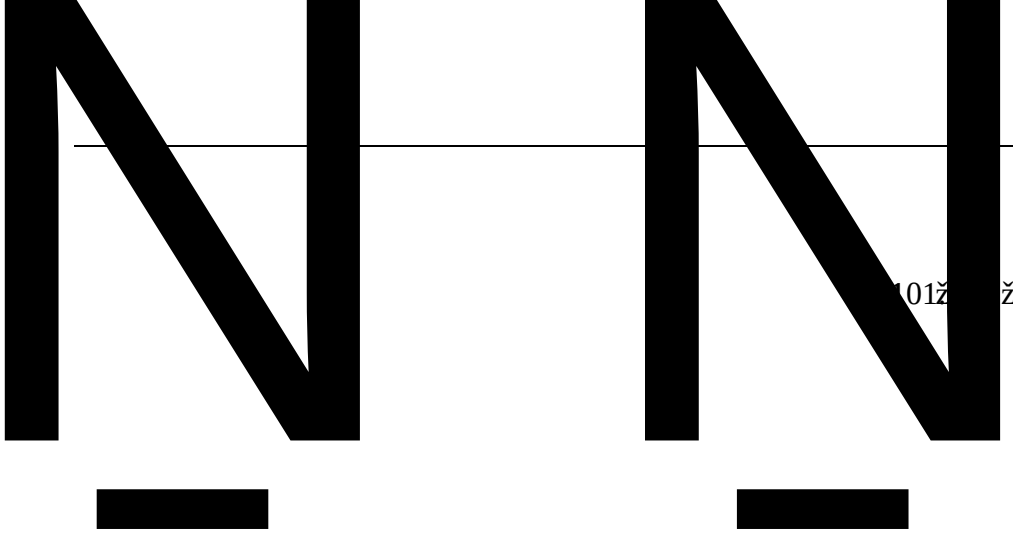
82%

54%



2 2 4m

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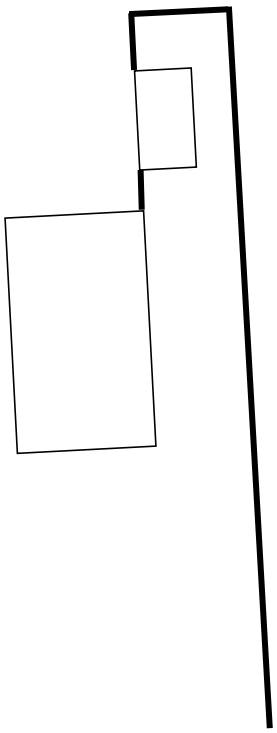

2-1			m	
			12.5	24
		-	-	-
			5.5	15.9
	1 H=6m	-	5	13
352			5.5	40
	H=8m		5	38.5
	2 H=6m	-	5	39
			12.5	25.6
		-	-	-
			5	15.6
	1 H=6m	-	5	12.4
352			5	44
	H=8m		5	42.5
	2 H=6m	-	5	43
			12.5	31.5
		-	-	-
			5	22.5
	1 H=6m	-	5	21.5
352			5	12

		H=8m		5	23.2
	2	H=6m	-	5	11
				10	21.5
			-	-	-
				3	18
	1	H=6m	-	5	15
352				3	38
		H=8m		5	36.5
	2	H=6m	-	5	37
				10	25.3
			-	-	-
				3	15.9
	1	H=6m	-	5	12.8
352				3	43.8
		H=8m		5	42.2
	2	H=6m	-	5	42.7
				10	35.5
			-	-	-

	1 H=6m		-	5	13.5
	352			3	22
	H=8m			5	32
	2 H=6m		-	5	21

2-2 m

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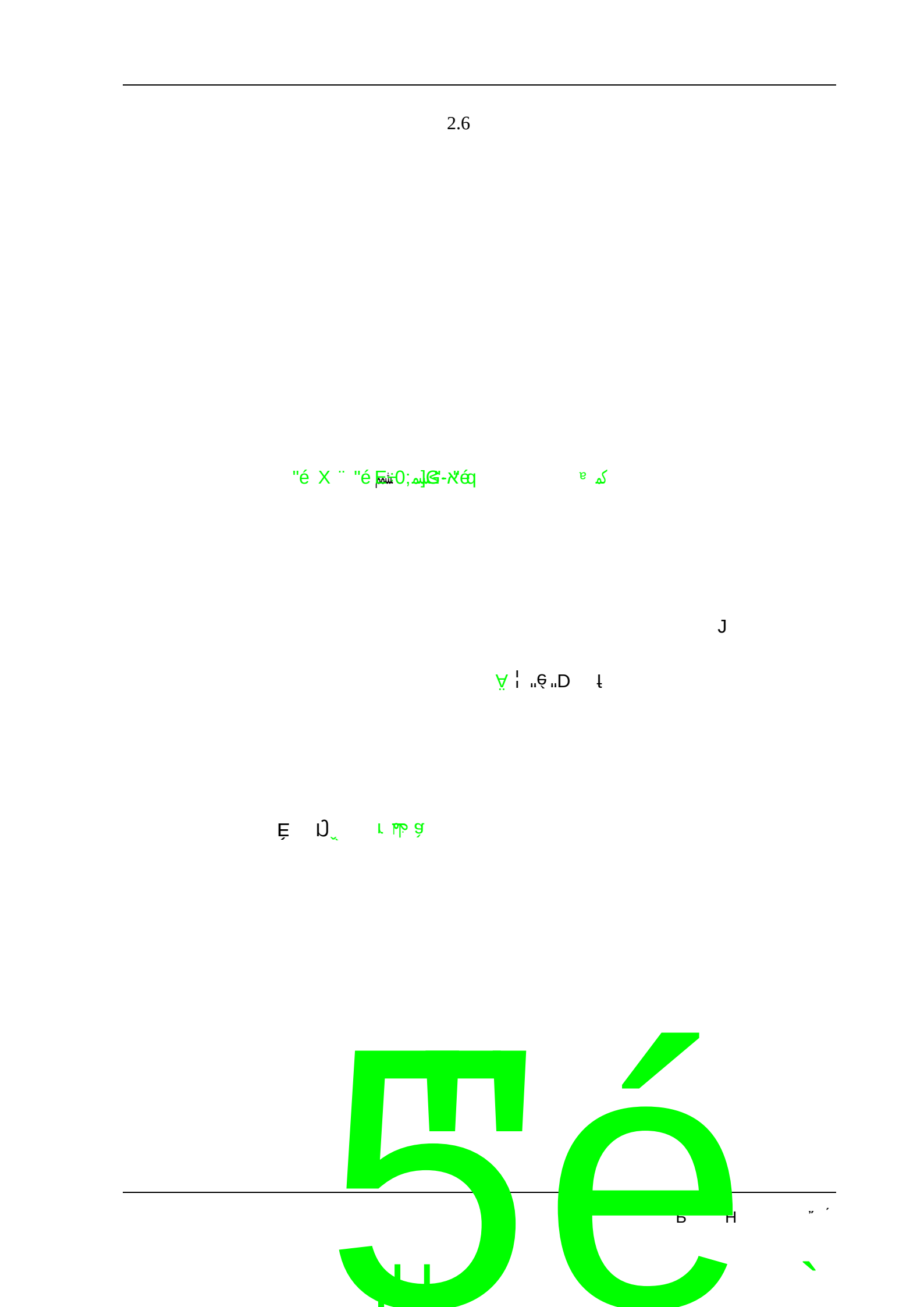
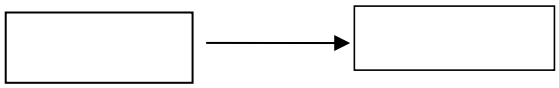
2-3





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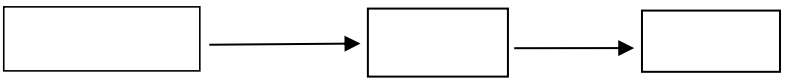

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5kg 6 5kg CO_2 7 35kg

2 5kg 2 $2m^3$

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1		200t
2		5000t

60m^3 0.75

45t 60m^3 0.89 53.4t

S=45/200+53.4/5000=0.23568<1

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3.2.1

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2025 1 17

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	1	GB50156-2021 3.0.4		
	2 GB50156 3.0.9	GB50156-2021 3.0.9	30m^3	
	3	GB50156-2021 3.0.25		
	4	GB50156-2021 3.0.27	9	
	1	GB50156-2021 4.0.1		
	2	GB50156-2021 4.0.2		
	3 4.0.4	GB50156-2021 4.0.4		

4.0.4

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GB50156-2021
4.0.12

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GB50156-2021
4.0.13

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GB50156-2021
5.0.1

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4m

6m

1.2m³

100mm 1.2m

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GB50156-2021
(5.0.7

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300m²

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4.0.4 1.5 25m

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	12 GB50156 5.0.13-1	GB50156-2021 5.0.13	2-1 2-2	
	13 C	GB50156-2021 5.0.16		

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GB50156-2021
6.1.1

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$10^9\Omega$

$10^9\Omega$

SF

GB50156-2021

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A=0.04Vt

6. SF

11.2 GB50156-2021

6.1.8

SF

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GB50156-2021

6.1.9

8 20

	11	GB50156-2021 6.1.13		
	12	GB50156-2021 6.1.14		
	13 90% 95%	GB50156-2021 6.1.15		
	14 0.8L/h	GB50156-2021 6.1.16		
	15 SH 3022	GB50156-2021 6.1.17	SF	
	1	GB50156-2021 6.2.1		
	2 50L/min	GB50156-2021 6.2.2	5-50L/min	
	3	GB50156-2021 6.2.3		

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GB50156-2021
6.3.5

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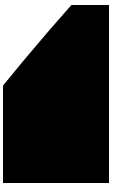
GB50156-2021
6.3.6



	8 50mm 100mm 45· T 150mm 200mm 200mm	GB50156-2021 6.3.8	100mm 45° 150mm	
	9 4m 2m	GB50156-2021 6.3.9	4m	
	10 50mm	GB50156-2021 6.3.10	50mm	
	11 2KPa~3KPa 1.5KPa~2KPa	GB50156-2021 6.3.11		
	12 GB/T8163	GB50156-2021 6.3.12		

4mm

			0.5m	
	17	GB50156-2021 6.3.18		
	18 6.3.12 1 2.8m/s 2	GB50156-2021 6.3.19		
	19 GB/T21447	GB50156-2021 6.3.20		
	20	GB50156-2021 6.5.1	SF	
	21 GB50108 200mm 500mm	GB50156-2021 (6.5.2	SF	

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1 35kg

15m

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AQ3010-2022
4.4

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AQ3010-2022
4.4

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90min GB50156-2021

13.1.3

90min

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GB50156-2021

4.5m 5m

13.1.4

4.5m

3m

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GB50156-2021

13.1.5

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LPG LNG CNG GB50156-2021

13.1.6

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			GB50156-2021 13.2.11
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	3	5.0.8		
	1	GB50156-2021 13.5.1		
	2. 1 2	GB50156-2021 13.5.2		
	3.	GB50156-2021 13.5.4		

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	7 B GB50016	GB50156-2021 14.2.11	B	
	8 3h	GB50156-2021 14.2.12		
	9	GB50156-2021 14.2.13		
	10 5.0.13 25m 3.0h	GB50156-2021 14.2.14		
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	12	GB50156-2021 14.2.16		
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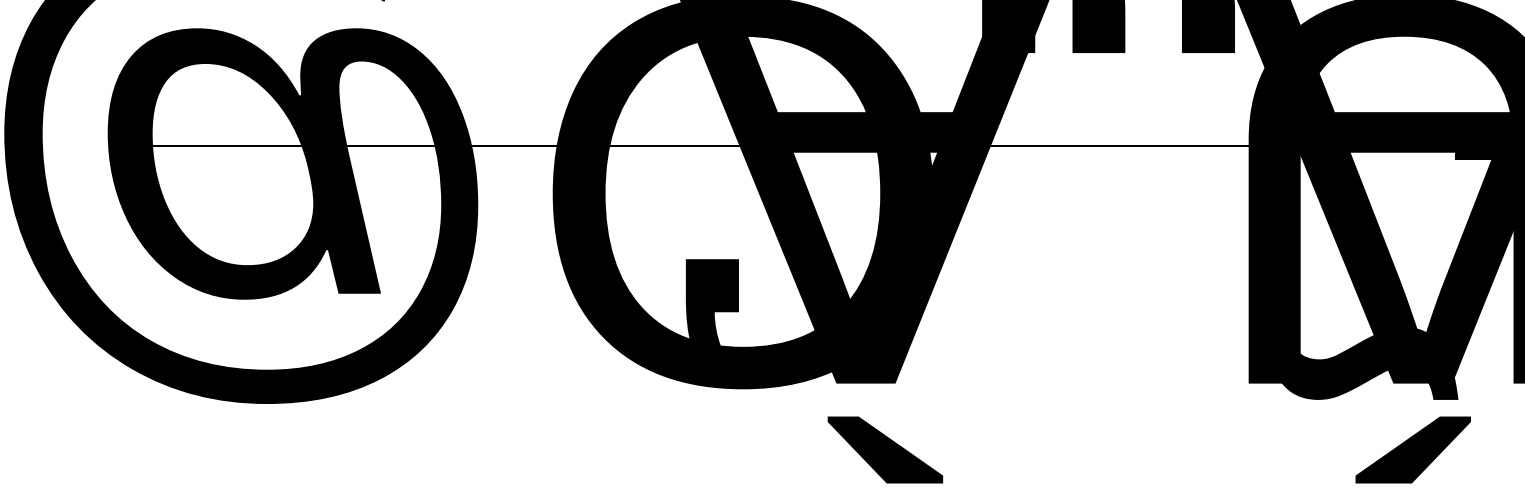

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	31	31	0	0
	22	19	0	3
	45	36	0	9
	10	10	0	0
	28	27	0	1
	16	9	0	7
	20	11	0	9
	3	3	0	0
	180	151	0	29

5-9

180 29 1510

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1		5kg	5kg 4	8
2		35kg	1	2
		5kg	-	2
			$2m^3$	$2m^3$
			5	6

3		5kg	-	6
		5kg CO_2	-	7

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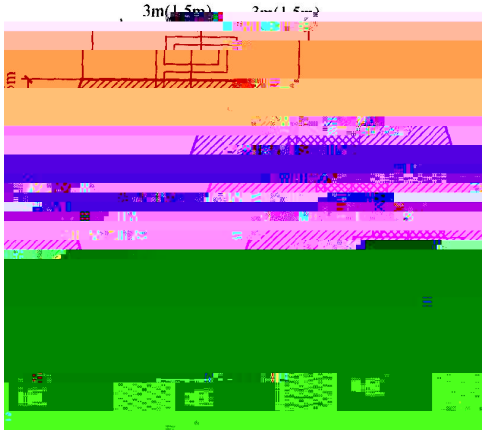


1

4. 2

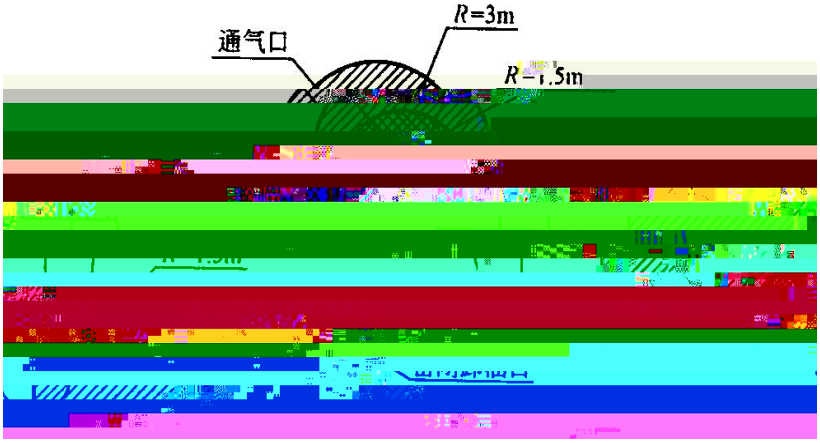
1 0

2 1.5m 0.5m

1

3 3m

1.5m 2



2

5. 3

1 0

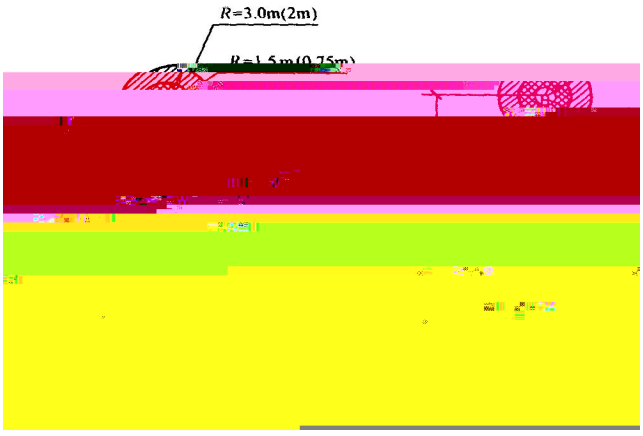
2 1.5m 0.75m

0.5m 1

3 1.5m 1m

3m 2m 1.5m

2



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