
“ ”

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2020 12

18

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1		1
1.1		1
1.2		1
2		14
2.1		14
2.2		20
3		26
4		27
4.1		27
4.2		27
4.3		27
4.4		27
4.5		27
4.6		27
4.7		28
5		29
5.1		29
5.2		29
6	.....	34
6.1	.....	34
6.2	.....	36
6.3 “ ”	.....	36
7	.....	38
7.1	.....	38
7.2	.....	42
7.3	.....	47
8	.....	49
9	.....	51
9.1	.....	51
9.2	.....	52
10	.....	55
A	.....	56
A.1	.....	
A.2	.....	56

A.3	.....	66
A.4	.....	71
B	.....	74
B.1		74
B.2		106
B.3		109
C		112
D		
E		
F		
G		
H		
I		
J		
K		
		

[illegible]

1.2

2 4 m " 3

1

$$\mathbb{Q} \qquad \qquad \qquad \mathbb{H}$$

2017 7 12 29
(
,2018 12

6
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29)

2
[2017]69 3 ,2007 11 1)
[2012]73 ,2013 7 1)
9 (397 , (653
,0014 3 29 p)
10
5 20)

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397 , (653
n " 5
(352 ,2002

13 = s b ([2018]703 2018 9 28

15 (591 , 645

2013 12 7)

16 708 ,2019 4 1

17 (64

2022

4 21)

18 ([2020]47 2020 03

30)

19 (

3	7	1	)	80	,2015
4			(		
5	29				
6	1		)		
7			(		53
8	1		)		
9	16	,2008	2	1	)
10	7		(	2	2019
11	1		)		
12	8		(		
13	30	,2015	5	29	80
14	,2015	7	1		)
15	9		(		
16	40	,2015	5	27	79
17	,2015	7	1		)
18	10		(		44
19	,2015	5	29	80	,2015
20	1		)		
21	11		<		
22			>	(	140
23				,2011	7
24				1	
25			)		

([2011] 95 ,2011 7 1)
21

[2014]94 ,2014 8 29)
 30 ()
 (([2015]113 ,2015 12 14
)
 31
 ([2015]43 ,2015 5 12
)
 32
 ([2016]62 ,2016 6 23)
 33 ()
 [2017]1 ,2017 1 5)
 34 <
 > [2012]111 ,2012 7 20
)
 35
 ([2016]25 ,2017 1 6)
 36
 [2013]206 ,2013 9 16)
 37 <
 > ([2017]22 ,2017 11 28
 2021 11 30)
 38

([2017]20 ,2017 17
9
([2017]45 2017 2 23)
40 ()
) > ([2017]5 ,2017 9
13)
41 [2022]0 < >
([2012]158 ,2012 9 27)
42 < B > ()
[2022]136 ,2022 11 21)
43

48

[2022]57

,2022 7 1

49

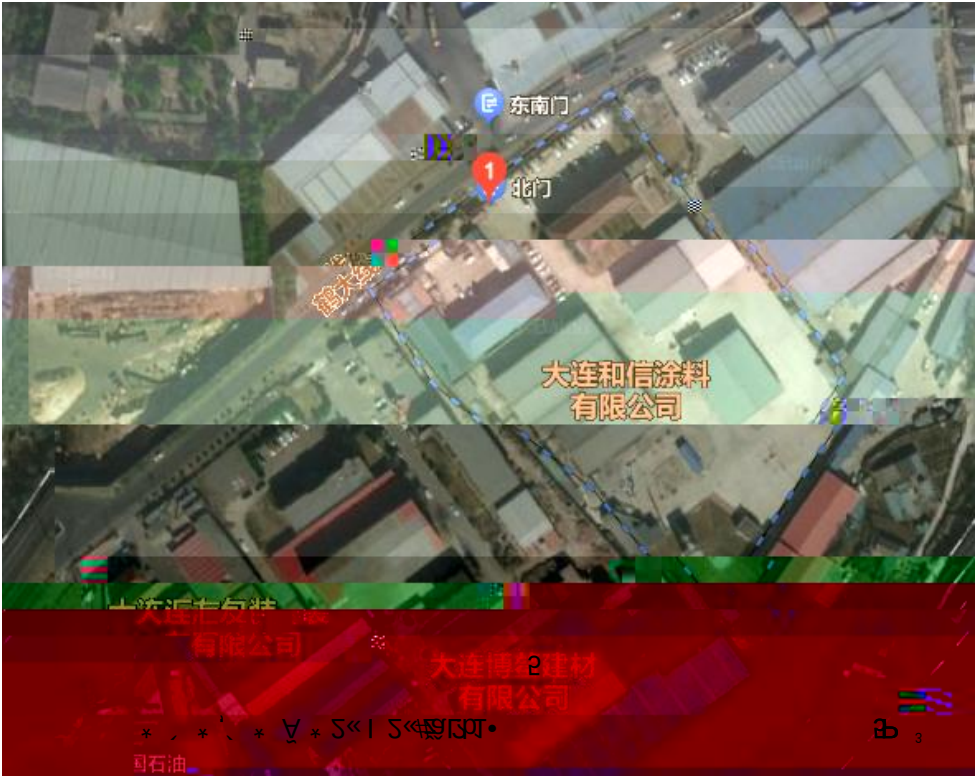
2022 59 ‘

25	:	
GB4053.3-2009)		
26	6	: (GB30000.6-2013)
27	18	: (GB30000.18-2013)
28	19	:
(G30000.9-2013)		
29	20	: /
(GB30000.20-2013)		
30	22	;
(GB30000.22-2013)		
31	23	; (GB30000.23-2013)
32		(GB6944-2012)
33		
(GB/T50493-2019)		
34		(GB30077-2013)
35		(GB5083-1999)
36		(GB6441-1986)
37		(GB/T13861-2022)
38		(GB/T12801-2008)
39		(GBZ158-2003)
40		(GB50055-2011)
41		(GB4387-2008)

61	(AQ/T3046-2013)
62	(AQ/T3047-2013)
63	(AQ/T3034-2022)
64	(AQ/T3052-2015)
65	
(GB/T29639-2020)	
66	(AQ/T9007-2019)
67	(AQ8001-2007)
68	(XF1131-2014)
69	(GB36894-2018)
70	
GB/T37243-2019	
71	(GB50151-2021)
72	(GB50303-2022)

1.2.4

- 1
- 2
- 3



2.1-2

2.1-1

2.1-1

1

GB50016-2014

4.2.1

3

6

25m

50m³

200m³

50%

2

2.1-2

2.1-2

1

GB50016-2014G

3.4.1

3.5.1

4.2.1

2

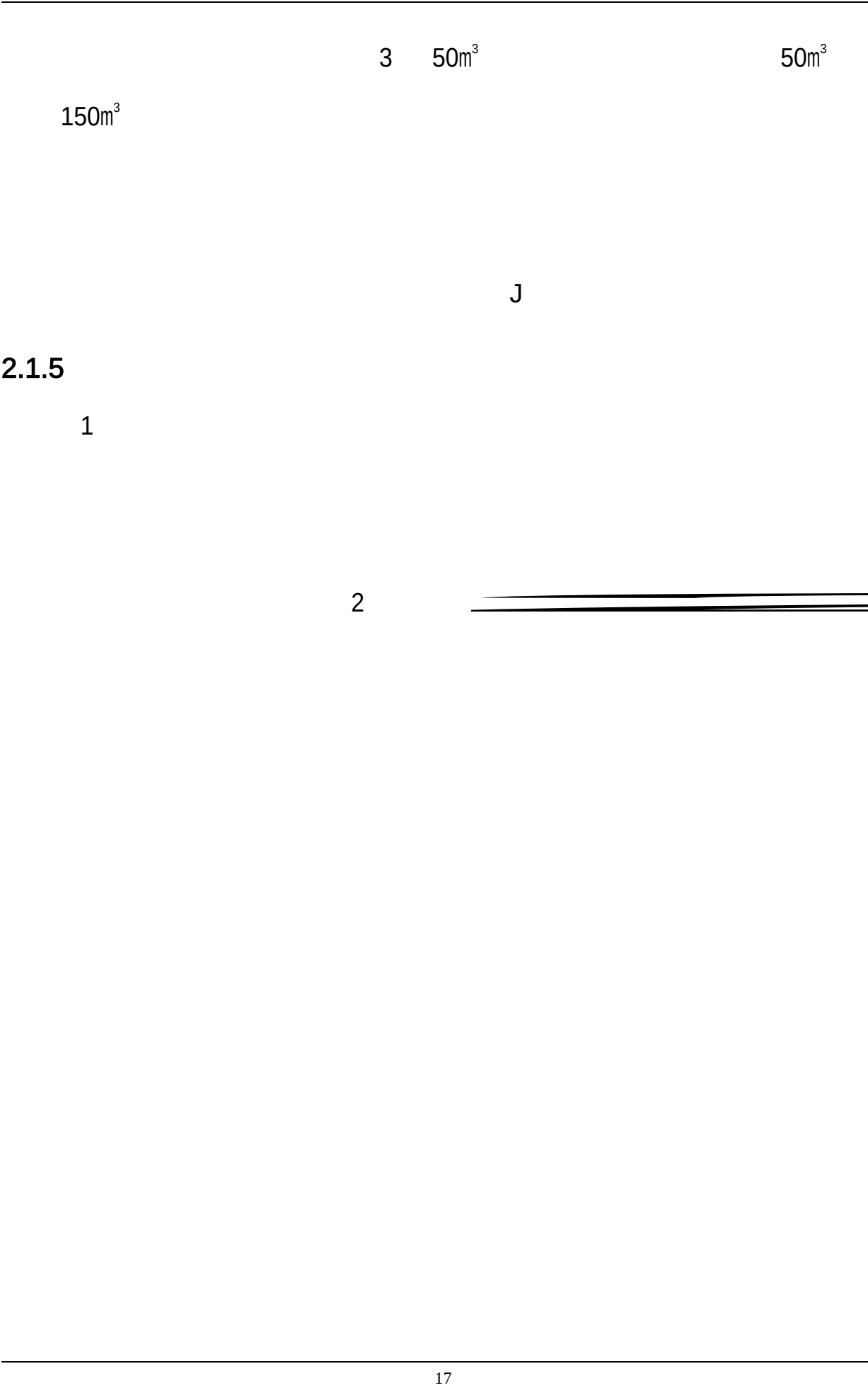
1*

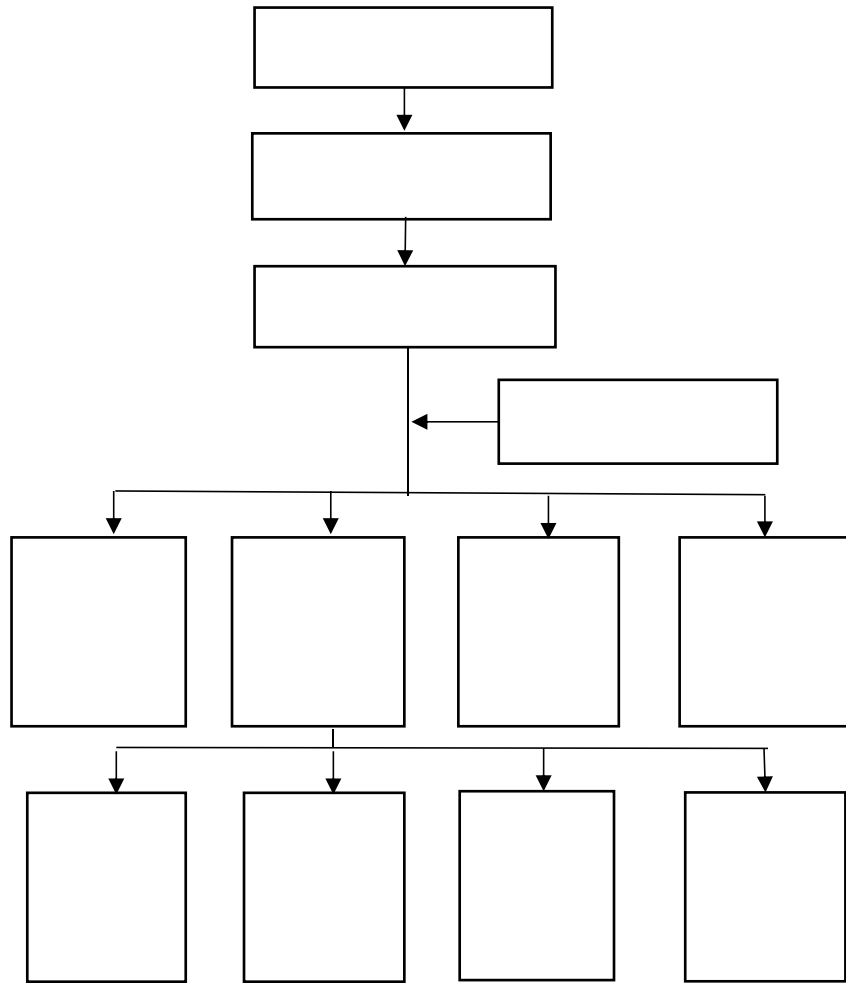
3/4

2.1.3

γ γ γ

4in 4





2.1-2

2.1.6

1

			(/)	
10		CPD15FB	1	
11		FD25T6N	1	
12		XN274G	1	/
13		1m ³	1	/
14		50m ³	3	

GB50058-2014

I I A

T2

2.2.3

1

1

1 10kV

315kVA

2

XN2.74G

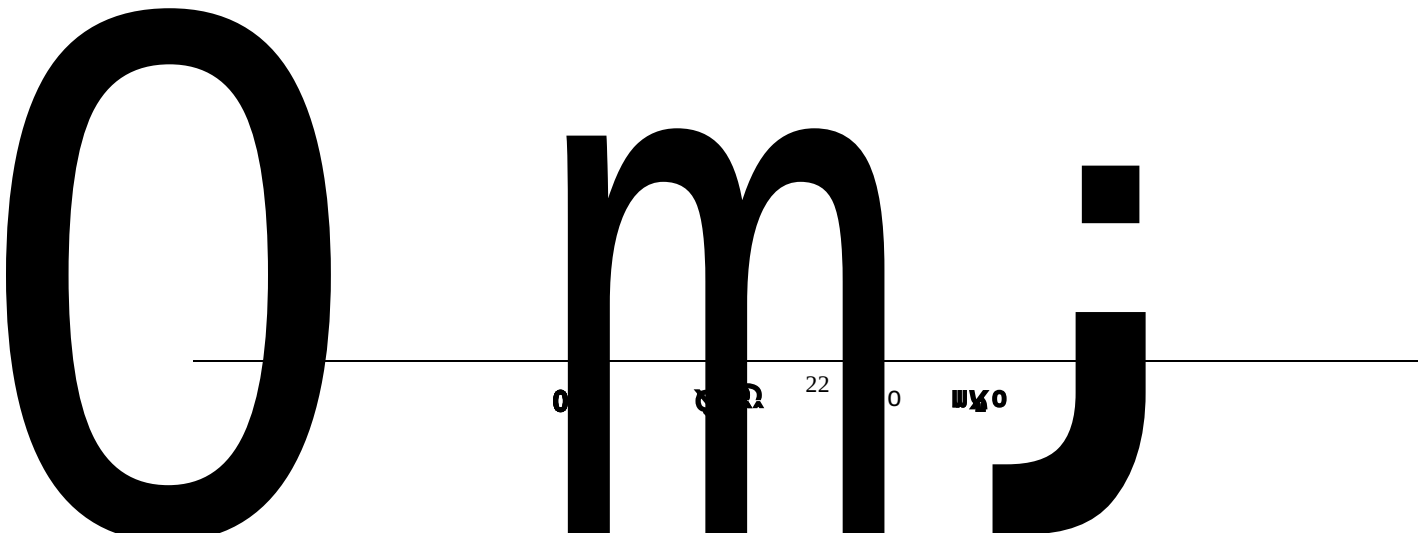
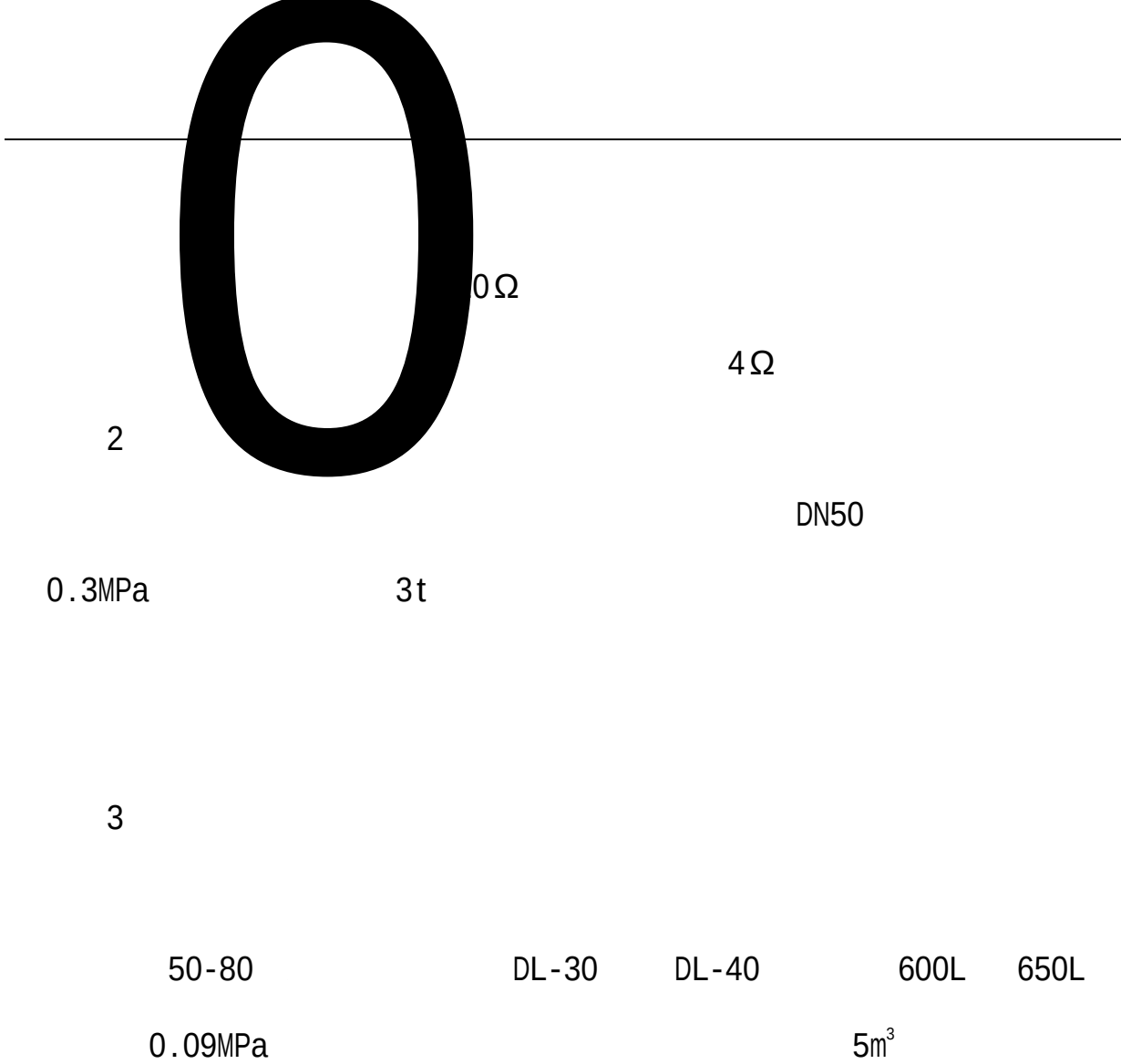
UPS

3

380/220V

4

TN-S



8		300*300mm	1	Q235
9		ZCLJ-CH-1000	1	Q235
10			1	Q235

γ K, ٥ Ā ٥ ñ`YI dē m'ūž ٧ ٧ ٧

450m³

25L/s

10L/s

2.2-3

2.2-3

1		DN150	3	
2		DN65	9	
3		450m ³	1	
4		Y123S ₂ -2	2	
5		Y200L ₂ -2	2	
6		Y200L ₂ -2	2	
7		Y112M-2	2	
8		8kg/4kg	102	
9		1m ³	1	
10		0.5m ³ 1m ³	4	
11		2m ³	/	
12		/	9	
13		/	1	

6

44

8

3

24

PLC

PLC

PLC

4

4.1

4.2

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4.3

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,

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4.4

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4.5

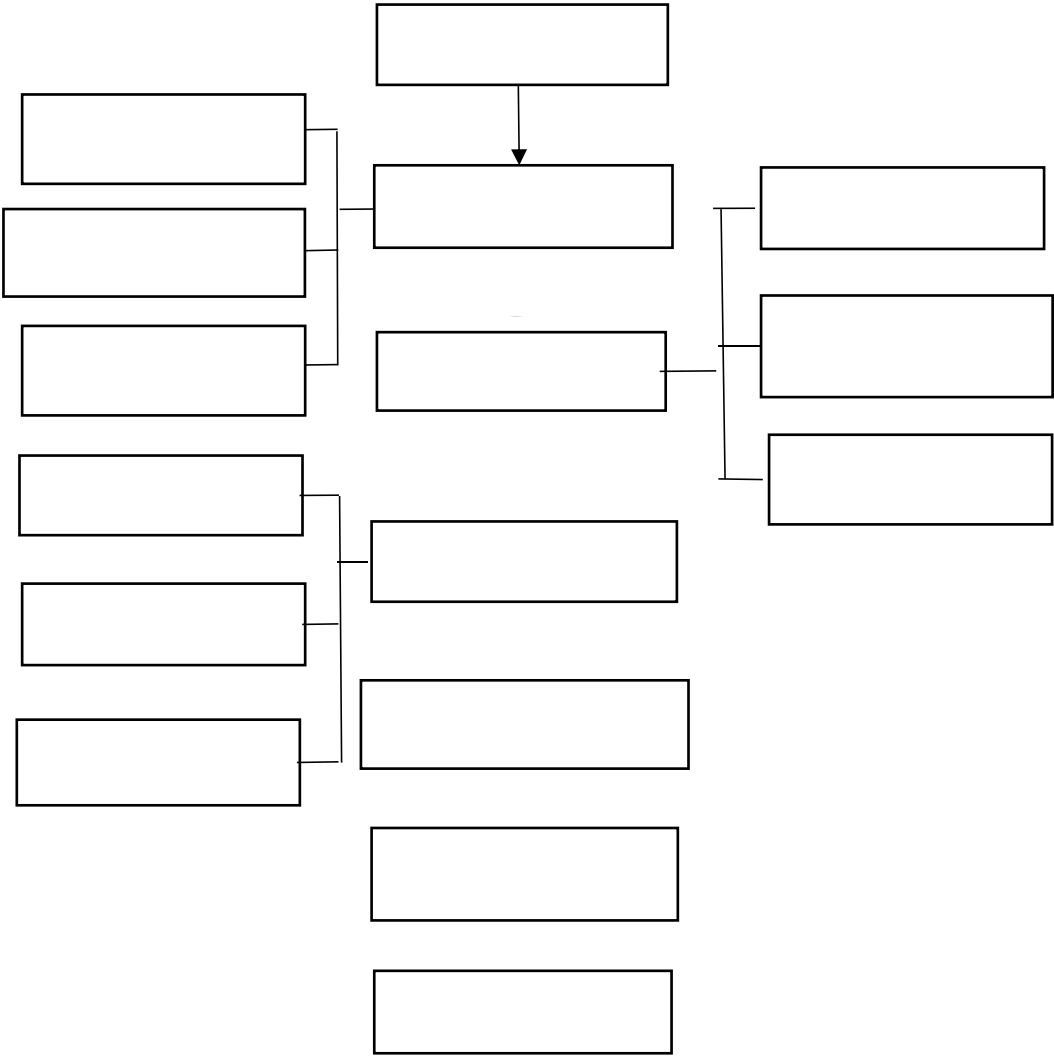
4.6

,

,

4.7

4.7-1



5

5.1

,

,

,

,

,

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,

5.1-1

5.1-1

1		
2		
3		
4		
5		

5.2

5.2.1

5.2-1

5.2-1

1				
2				
3				

5.2.2

1
(SCL)

,

,

2

(K.J.Graham)

(G.F.Kinney)

L

E

C

$D=L \times E \times C$

D

L E C

5.2-2

5.2.-5

1

5.2-2

5.2-2

(L)

10		0.5	
6		0.2	
3		0.1	
1			

2

5.2-3

5.2-3

(E)

10		2	
6		1	
3		0.5	

3

C

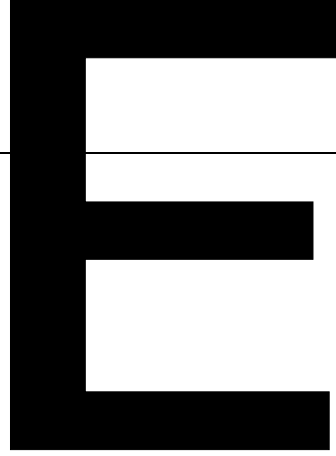
5.2-4

5.2-4

(C)

100		7	
40		3	
15		1	

	$Q_{\text{TNT}}\text{---TNT}$	$4.52\times10^6\text{J/kg}$
	TNT	
1	R_1	
	$R_1=13.6\sqrt[3]{W_{\text{TNT}}/1000}^{0.37}$	
2	R_2	R_2
	$\Delta p_s=0.137Z^{-3}+0.119Z^{-2}+0.269Z^{-1}-0.019$	
	$Z=\frac{R_2}{(\frac{E}{p_0})^{\frac{1}{3}}}$	$\Delta p_s=\frac{44000}{p_0}\quad p_0=1.01\times10^5\text{pa}$
3	R_3	R_3
	$\Delta p_s=0.137Z^{-3}+0.119Z^{-2}+0.269Z^{-1}-0.019$	
	$Z=\frac{R_3}{(\frac{E}{p_0})^{\frac{1}{3}}}$	$D=\frac{17000}{p_0}$



6.1-1

6.1-2

6.2

6.2-1

6.2-1

6.3 “ ”

6.3.1

[2011]95

[2013]12

6.3.2

[2009]116

[2013]3

6.3.3

A.3

7

7.1

7.1.1

1

54m

54m

137m

146m

100m

81m

72m

23.4m

12m

31m

26m

1

2

3

4

5



7

8 Å

GB18218

1

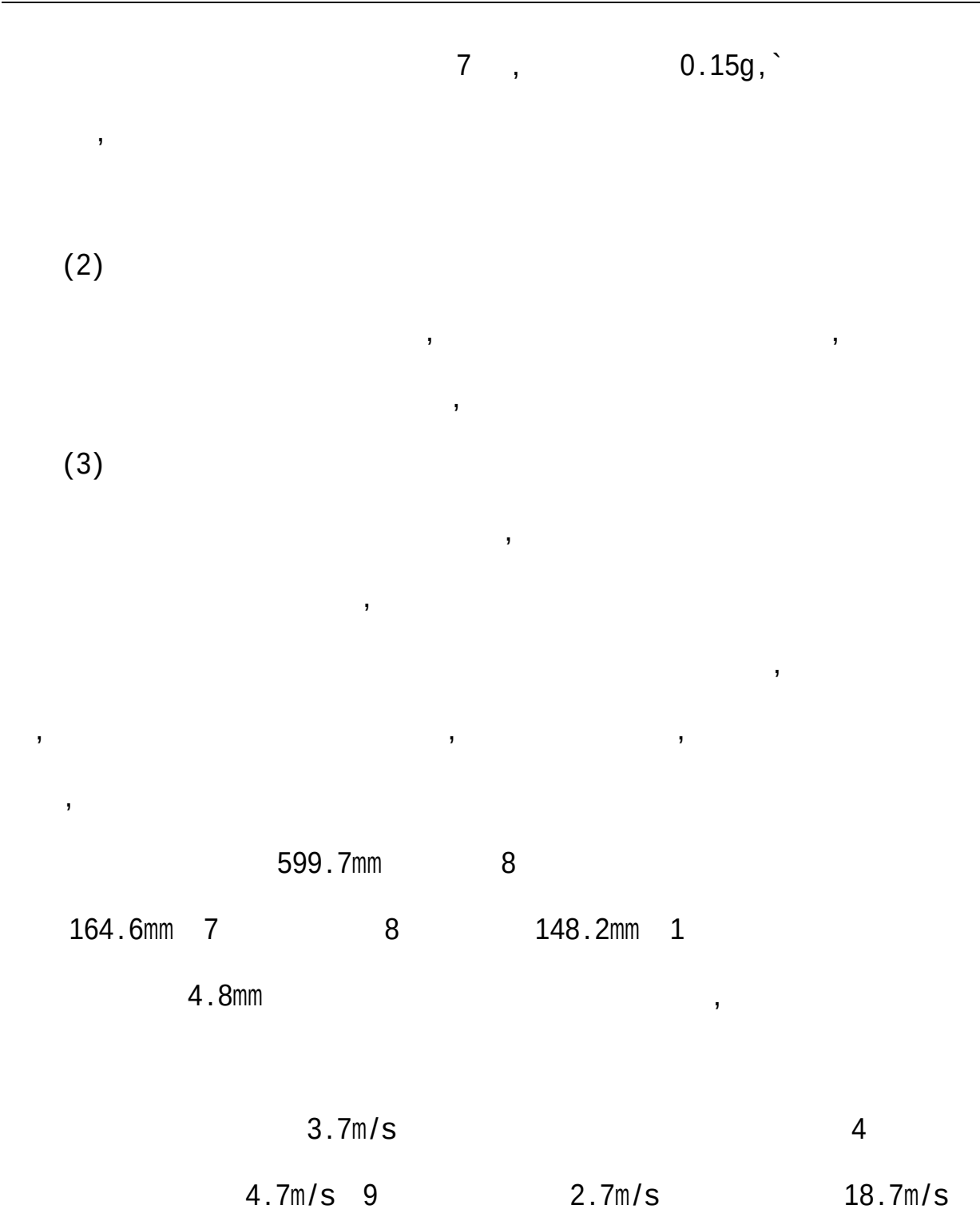
7.1.2

1

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6

“

2022 136 ”

7.2-3

H

7.2-3

1	2020	6400	148	148	
2	2021	7300	166	166	
3	2022	5700	150.75	150.75	

7.2.2

1

2

CO

,

7.2.3

7.2-4

7.2-4

1			QJ-T-04Z	44	
			QJ-T-04Z	8	
			QJ-T-04Z	3	
			QJ-T-04Z	1	
			QJ-T-04Z	1	
2			15000m ³ /h	4	
			22000m ³ /h	1	
			18000m ³ /h	1	
			15000m ³ /h	4	
			22000m ³ /h	5	
			3300m ³ /h	6	
3			/	1	
			/	9	
			/	3	1
			ABC 8Kg	50	
			ABC 8Kg	16	
			ABC 8Kg	4	

			ABC 35Kg	2	
			ABC 8Kg	4	
			ABC 35Kg	2	
			ABC 8Kg	4	
			ABC 8Kg	8	
			ABC 8Kg	16	
			1/0.5	4/1	
4			/	1	
			/	3	
			/	1	
5			6L	2	
			/	3	
6			/	10	
			/	10	
			/	15	

7.2.4

7.2-5

7.2-5

1			1		
2			4	/	
3			1		
4		6L	2		
5			3		
6			10		
7			10		
8			15		1

9			2		
10			2		
11			4		
12			1		
13			1		
14			5		
15			15		
16			60		
17			60		

7.3

7.3.1

B.1

“ ”

4

1

2

3

4

7.3.2

	2	“	”
1	“	”	

7.3-1

7.3-1

		L	E	C	D=L×E×C		
1		1	6	7	1×6×7=42		2
2		1	6	3	1×6×3=18		1

7.3.3

7.3 2

7.3 2

TNT				
811.54	12.6	37.09	64.91	33.27

8

1

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50m³,

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12.6m

37.09m

64.91m

33.27m

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252

20000m²

7.3-2

2

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9

9.1

9.1-1

1

9.2

1

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10

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11

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13

14

18

19

20

A

A.2

A.2.1

1

1

1,2-

$10^{11} \Omega \cdot \text{cm}$ $10^{15} \Omega \cdot \text{cm}$

2

50

3

2

4

1

2

3

1

3
1
2

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315kVA

1,2-

2

6

7

8

9

10

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A.2.4

0

2

3

4

5

A.2.6

1

2

3

4

A.2.7

2m

2m

2m

A.2.12

1

2

3

A.3

1

2

$$S=q_1/Q_1+q_2/Q_2+\dots+q_n/Q_n\geq 1$$

$S=$ —

$q_1, q_2, \dots, q_n$ —

t

$Q_1, Q_2, \dots, Q_n$ —

t

A.3.2

1 2-

1

2

A.3.2-4

		q t	Q t	q/Q	S	
1				0.2465	0.2465	1

$$\frac{246.5}{1000} = 0.2465 < 1$$

1

3

138Kg;1,2-

207Kg

4.138t

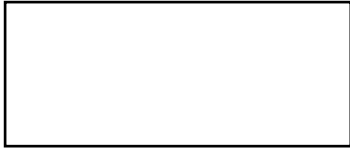
276Kg

276Kg

138Kg

A.3.2-5

q t



11				
12				
13				
14				
15				
16				
17				
18				

19			,	
20				
21				

B.1.2

B.1.2-1 B.1.2-2 B.1.2-3

B.1.2-1

1		GB50489-2009 3.1.1		
2				

7		GB50489-2009 5.1.4		
8				
9	1 2 3	GB50489-2009 5.1.6		
10		GB50489-2009 5.1.9		
11		GB50489-2009 5.1.10		
12		GB50489-2009 5.1.13		

13

GB50187-2012

5.3.1

14

GB50187-2012

5.7.1

$\vec{\alpha}$

15

|

	m	m	
(1 ≥ 10t)	12	12	GB50016 3.4.1
	15	54	GB50016 3.4.1
	12	76	GB50016 3.4.1
	12	23	GB50016 3.4.1
	40	146	GB50016 3.5.1
	5		
	20	54	GB50016 3.5.1
	15	31	GB50016 3.5.1
	15	87	GB50016 3.5.1

m

		m	m	
			30	
		25		GB50016-2014
			11m	3.5.1
(				
1		15	16	GB50016-2014
≥ 10t)				3.5.1
		15	20	GB50016-2014
				3.5.1
		5	24	GB50016-2014
				3.4.12
		15	20	GB50016-2014
				3.5.1
		15	20	GB50016-2014
				3.5.1
		15	20	GB50016-2014
				3.5.1
		7.5	3	GB50016-2014
				4.2.1
		7.5	3	GB50016-2014
				4.2.1
		<		
C0		7.5	3	GB50016-2014
				4.2.1

B.1.3

B.1.3-1

B.1.3-1

1		GB50016-2014 3.3.4		
2	3000m ²	GB50016-2014 3.3.1	3000m ²	
3		GB50016-2014 3.3.5		
4		GB50016-2014 3.6.2		
5		GB50016-2014 3.6.6		
6	2 5m	GB50016-2014 3.7.1	2 5m	
7	2	GB50016-2014 3.7.2	2	
8	30	GB50016-2014 3.7.4		

9 1.10m
 1.40m GB50016-2014 3.7.5
 0.90m

10 GB50016-2014
 6.4.11

11 GB50016-2014 9.2.2

12

22

1

28

ad

10			GB17914-2013	
			4.2.1	
11	15cm		GB17914-2013	
			6.1.2	
12			GB17914-2013	
		3m	6.1.3	3m
			,	
13				

17

GB2894 AQ3047

GB15603-2022 11.2.1

18

μm

21

19

GB50016-2014 4.1.2

20

GB/T12801-2008 5.8.1

21

↓ 3 X

0%~

	: B	SH/T3007-2014 5.1.3		
3	B	SH/T3007-2014 5.1.9		
4	120 200mm B A	SH/T3007-2014 5.3.13		
5	: ;	SH/T3007-2014 5.4.2		
6		SH/T3007-2014 5.4.5	PLC	
7	B A	SH/T3007-2014		

		5.4.8		
8	(PE) (PEN) (PE) (PEN)	GB50303-2022 3.1.7		
9		GB/T12801-2008 6.3.11		
10	GB50058	GB50016-2014 10.2.6		
11		GB/T12801-2008 6.8.4		

4

- 1
- 2
- 3
- 4

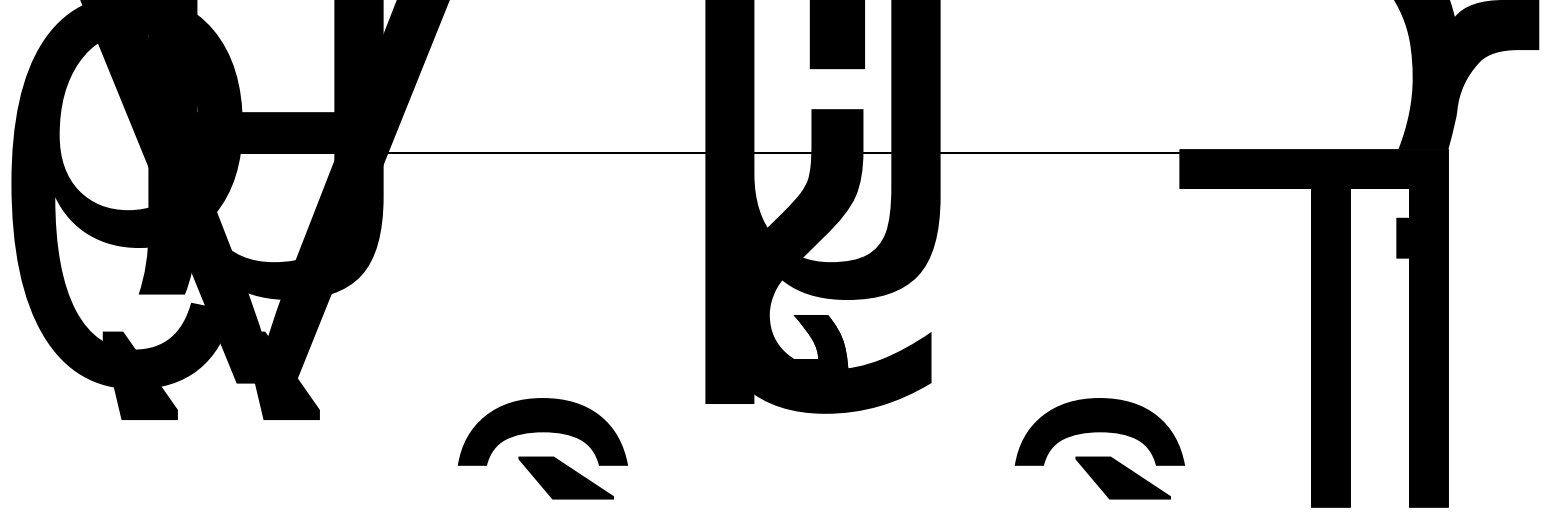
B.1.5

B.1.5-1

B.1.5-1

1	2 5	GB50140-2005 6.1	2	
2		GB50140-2005 5.1.1		
3		GB50140-2005 5.1.2		
4		GB50140-2005 5.1.5		
5		GB50140-2005 8.1.2		
6	300m ²	GB50140-2005 8.2.1		
7		13		

		6.1.1
15	PE	GB50303-2015
		6.1.2
16	GB50058	GB50257-2014
		5.1.4
17		GB50257-2014
		5.2.3
18		GB/T13869-2017
		5.1
19		21



17			
18		GB30871	
19			
20			

206

14

B.1.8

“

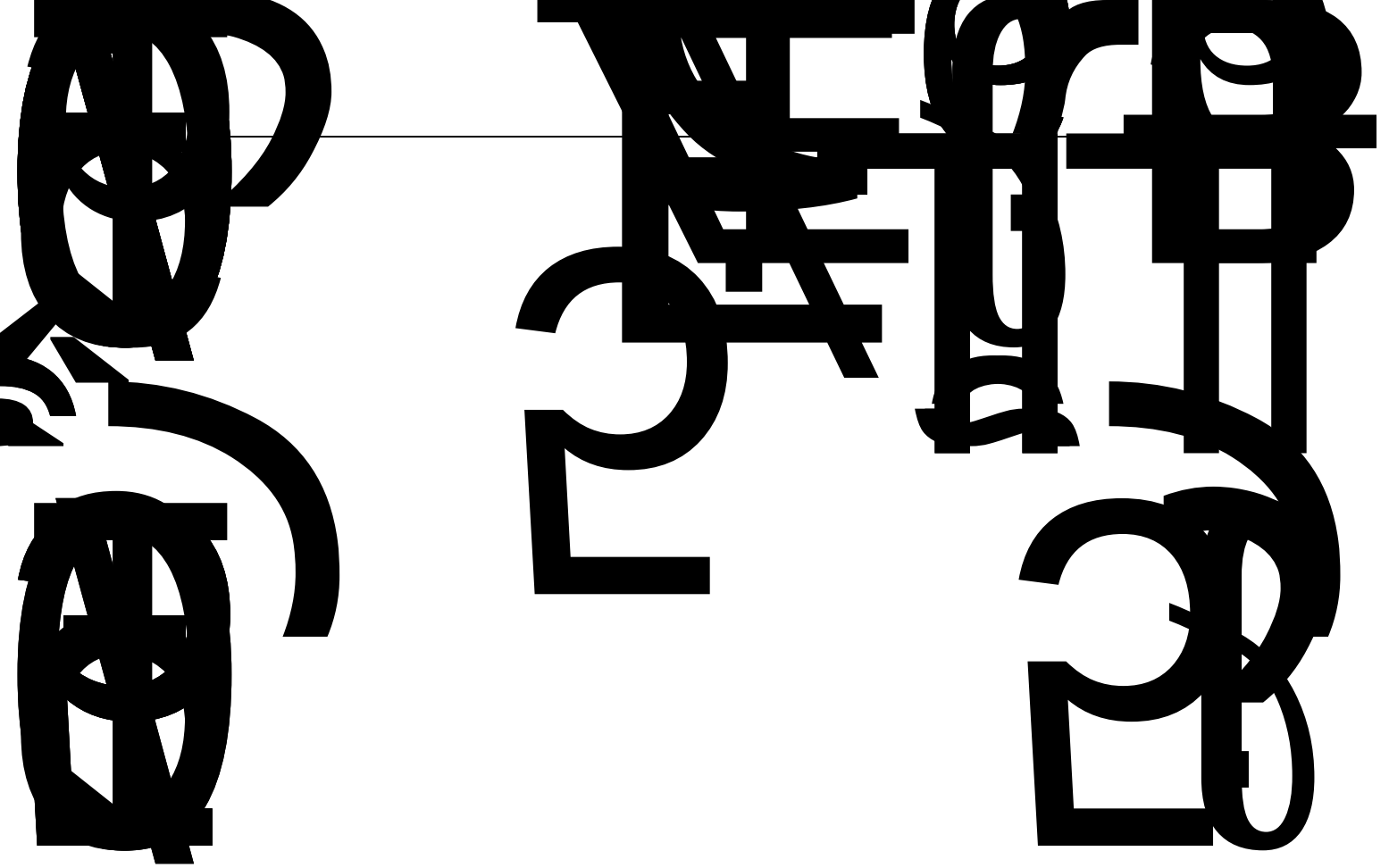
”

4

B.1.8-1

B.1.8-1

1			
2			



22

23

24

1

LEC

L

E

C

:D=L×E×C D

L E C D

B.2-1

L

10		0.5	
6		0.2	
3		0.1	
1			

B.2-2

E

10		2	
6		1	
3		0.5	

B.2-3

C

100		7	
40		3	
15		1	

B.2-4

D

> 320		20 70	
160 320		< 20	
70 160			

1

1,2-

L

“

” L 1

E

E 6

C

“ ” C

3

$$= \quad \times \quad \times \quad = 1 \times 6 \times 3 = 18$$

D1

“”B.2-5

B.2-5

		L	E	C	D=L × E × C		
1		1	6	7	1 × 6 × 7=42		2
2		1	6	3	1 × 6 × 3=18		1

B.3

1 TNT

40t 2244.2kJ/mol 88.10

4%

5% TNT

$= 1.8 \times \frac{0.04 \times 4000 \times 0.05 \times 2244.2 \times 10^6}{4.52 \times 10^6 \times 88.10} = 811.54$

TNT

$$R_1 = 13.6 \times \left(\frac{811.54}{1000}\right)^{0.37} = 13.6$$

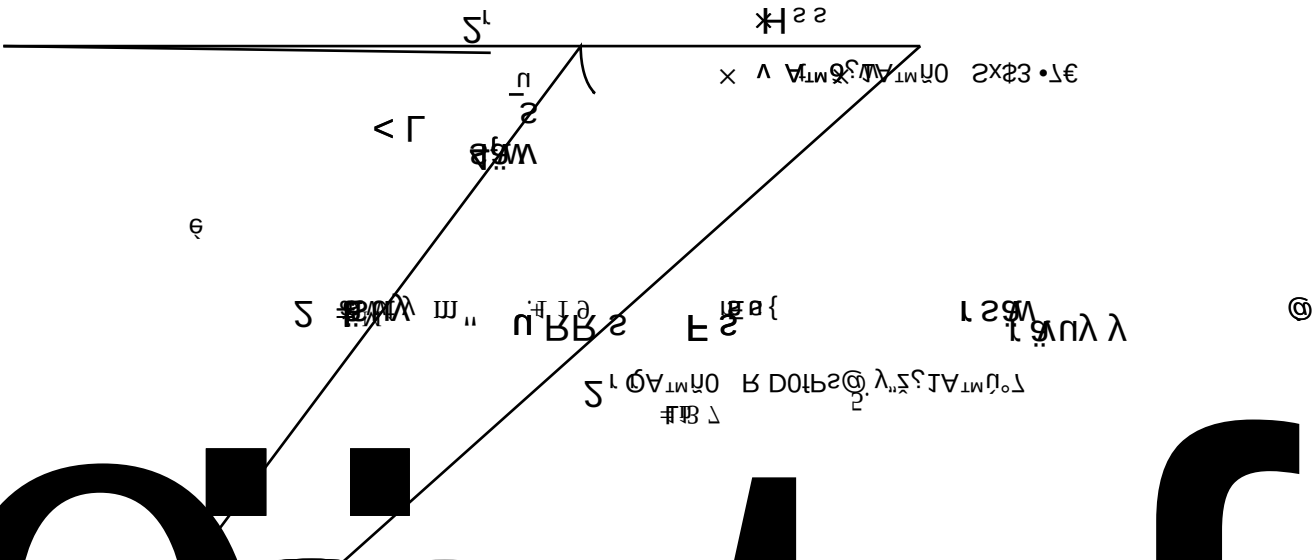
$$R_2 = 12.6$$

$$\frac{44000}{1.01 \times 10^5} = 0.436$$

$$= 0.137^{-3} + 0.119^{-2} + 0.269^{-1} - 0.019 = 0.436$$

$$= 1.12$$

$$\frac{811.54 \times 4.52 \times 10^6}{1.01 \times 10^5}$$



Best vs

$$= \frac{11^{\frac{1}{3}}}{\left[1 + \left(\frac{3175}{811.54}\right)^2\right]^{\frac{1}{6}}} = \frac{5.6 \times 811.54^{\frac{1}{3}}}{\left[1 + \left(\frac{3175}{811.54}\right)^2\right]^{\frac{1}{6}}} = 33.27$$

R— 4.6

B.3-1

TNT				
811.54	12.6	37.09	64.91	33.27

C

, C.1

C.1

1

25	
26	
27	
