DATABOOK

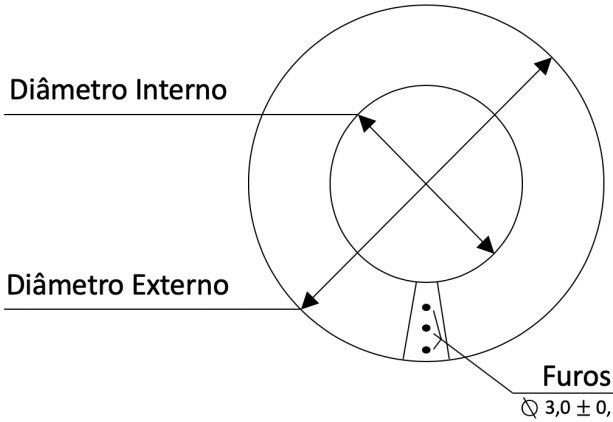
BOOSTER SHEDS

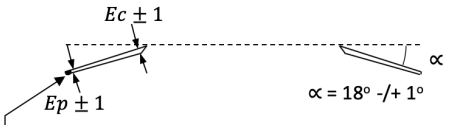
ARGO ENERGIA

CONTRATOS
4500014921 REV1
4500014929

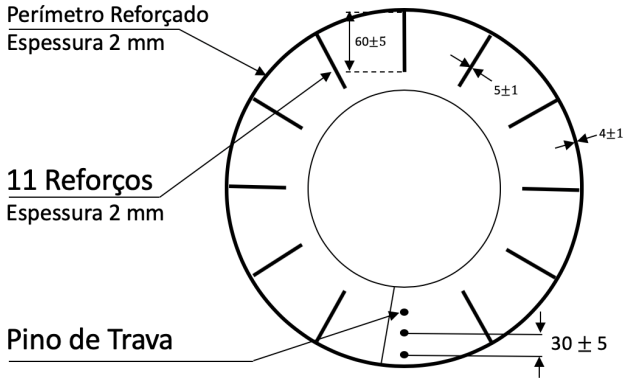
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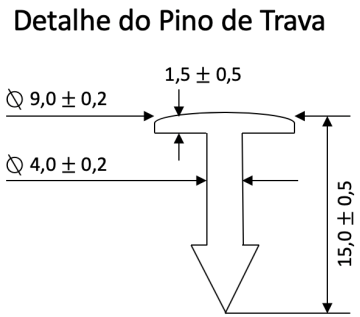
Desenho Aprovado Booster Sheds





Características Técnicas / Technical Characteristics	
Cor / Color	Marrrom / Brown
Diâmetro Interno / Internal Diameter	Ver tabela / See table (+/- 10mm)
Diâmetro Externo / External Diameter	Ver tabela / See table (+/- 10mm)
Resistividade Volumétrica / Volumetric Resistivity	> 2,4 x 10^{12} ohm.m
Resistividade Superficial / Surface Resistivity	> 1,0 x 10^{12} ohm.m
Tensão Elétrica de Ruptura do Isolamento Breakdown Voltage	> 29,8 kV/mm
Resistencia ao Trilhamento e Erosão Elétrica Tracking and Erosion Resistance	TMA 4.5
Elongação / Elongation %	500%
Ruptura Mecânica / Mechanical Rupture	> 15 kN/m
Dureza Shore / Shore Hardness	> 50 Shore A
Flamabilidade / Flamability	FV-0





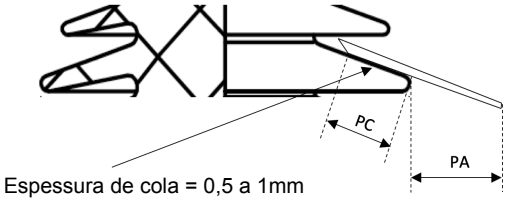


Tabela de Características, Dimensional (mm) e de Aplicação
Characteristics, Dimensional (mm) and Aplication Table

Item	Aplicação	Diâmetro Interno Booster Shed	Diâmetro Externo Booster Shed	Tolerância	Espessura do Perímetro Ep	Espessura Central Ec	Tolerância	Peso Unitário kg	Diâmetro Externo Saia Isolador	Perfil de Aumento da Saia (PA)	Diâmetro Interno Núcleo Isolador	Perfil de Comprimento da Colagem (PC)	QTD por Pólo
Item	Equipment	Internal diameter of Booster Shed	External diameter of Booster Shed	Tolerance	Outer Thickness Ep	Inner Thickness Ec	Tolerance	Unit Weight kg	Insulator External Shed Diameter	Radius Increase over the insulator external shed (PA)	Insulator core Diameter	Radius Profile of Glue (PC)	QTY per Pole
1	Secionadora (Suporte)	130	410	+/- 10mm	4	4	+/- 1mm	1,10	265	72,5	120	67,5	8
2	Secionadora (Rotativo)	110	350		4	4		0,75	230	60,0	100	60,0	8
3	Disjuntor (Suporte Superior)	110	470		4	4		1,55	320	75,0	210	50,0	4
	Disjuntor (Suporte Inferior)	220	560		5	5		1,70	365	97,5	225	65,0	4
4	Transformador de Corrente	330	580		4	6		1,60	470	55,0	320	70,0	8
5	Transformador de Potencial Capacitivo	190	410		4	4		0,95	275	67,5	180	42,5	10
6	Pára Raios 550kV	195	450		4	4		1,22	306	72,0	189	53,5	7
7	Transformador e Reator - Bucha AT Fases	260	490		5	5		1,17	382	54,0	250	61,0	3
		330	580		4	6		1,60	462	59,0	320	66,0	3
8	Isolador Coluna Suporte 550kV	160	450		4	4		1,28	340	55,0	150	90,0	8

Revisão	Data	Descrição	Verificação	Aprovação
04	27/01/20	Diâmetros dos Furos dos Pinos	Iven Zang	Claudio Costa Teixeira
03	17/01/20	Peso e Espessuras / modelo	Iven Zang	Claudio Costa Teixeira
02	06/01/20	Alterado item 3 e tabela D8-A10	Iven Zang	Claudio Costa Teixeira
01	03/01/20	Emissão Inicial	Iven Zang	Claudio Costa Teixeira

Revisão:	01
Data:	03/01/20
Desenho:	Alessandro
Verificação:	Iven Zang
Aprovação:	Claudio Teixeira
Escala:	Sem Escala
Peso:	Ver Tabela

Fornecimento: TxΠ Rui Ser

Cliente: ARGO

Contrato: 4500014921 4500014922

Título: BOOSTER SHED COMPOSTO

Designação:

Número do Desenho: DRG 20191209

Dimensões: mm

Folha: 01

Posição dos Booster Sheds

Seccionadora 500kV
(Suporte e Rotativo)

CARACTERÍSTICAS ISOLADOR SUPORTE - C8-1800III

Distância de escoamento 13750mm
Distância de arco a seco: 3600mm
Tensão de ruptura à flexão 8kN
Tensão de ruptura à torção 7kN.m
Tensão suportável a seco (1min) >=740kV
Tensão suportável de impulso atmosférico (Ui) 1800kV
Tensão suportável de impulso de manobra (Us) 1300kV

#Radio interferencia:
Tensão de teste 350kV
Max. R.I.I. AT. 1MHz-Ref. 300Ws 250µV

#Notas aplicáveis
IEC 60273
IEC 60168
ASTM A 123

CARACTERÍSTICAS ISOLADOR ROTATIVO - T3-1800III

Distância de escoamento 13750mm
Distância de arco a seco: 3600mm
Tensão de ruptura à torção 3kN.m
Tensão suportável a seco (1min) >=740kV
Tensão suportável de impulso atmosférico (Uj) 1800kV
Tensão suportável de impulso de manobra (Us) 1300kV

#Radio interferencia:
Tensão de teste 350kV
Max. R.I.I. AT. 1MHz-Ref. 300Ws 250µV

#Notas aplicáveis
IEC 60273
IEC 60168
ASTM A 123

NOTAS:
1- DIMENSÕES EM mm
2- COR MARROM
3- MATERIAL PORCELANA

Unidade Local AIB		Unidade: mm Formato: A3	Local N/A N/A
Referência N/A	Massa(kg) N/A	Escala: 1:20 Folha: 09/09	Nome da folha N/A
Número Desenho 5192225398.310-600			Revisão N° 00

Descrição

ARGO TRANSMISSÃO DE ENERGIA S.A.

SPOT 550kV 4000A

ISOLADORES

Grid Solutions

Referência do CLIENTE -

Número Desenho CLIENTE ARG-1-EQ-PCD-DE-M203

ARGO

Desenhado por	MFA	23.06.17
Verificado por	LAZ	23.06.17
Aprovado por	LAZ	23.06.17

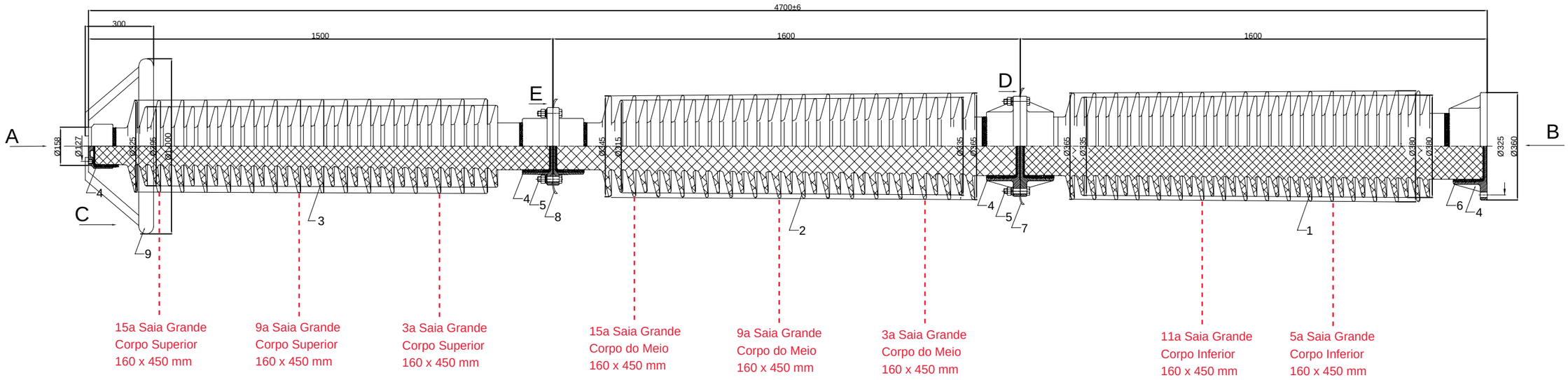
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Posição dos Booster Sheds

Isolador Suporte 500kV

EQUIPAMENTO: ISOLADOR SUPORTE - 550 kV	FORNECEDOR: SIKLOWATT	FABRICANTE: HUNAN YANGDONG



15a Saia Grande
Corpo Superior
160 x 450 mm

9a Saia Grande
Corpo Superior
160 x 450 mm

3a Saia Grande
Corpo Superior
160 x 450 mm

15a Saia Grande
Corpo do Meio
160 x 450 mm

9a Saia Grande
Corpo do Meio
160 x 450 mm

3a Saia Grande
Corpo do Meio
160 x 450 mm

11a Saia Grande
Corpo Inferior
160 x 450 mm

5a Saia Grande
Corpo Inferior
160 x 450 mm

Total de 8 Booster Sheds 160 x 450mm

CARACTERISTICAS TÉCNICAS GARANTIDAS GUARANTEED TECHNICAL CHARACTERISTICS		
Cor Color	-	Marron Brown
Distância mínima nominal de escoamento Minimum creepage distance	mm	17.050
Distância de arco a seco Dry arcing distance	mm	4.200
Tensão suportável a frequência industrial a seco Dry power frequency withstand voltage	kV	900
Tensão suportável a frequência industrial sob chuva Wet power frequency withstand voltage	kV	800
Tensão suportável de impulso de manobra (+/-) Wet switching impulse withstand voltage (+/-)	kV	1.300
Tensão suportável de impulso atmosférico (+/-) Lightning impulse withstand voltage (+/-)	kV	2.100
Resistência a flexão Cantilever strength	kN	10
Resistência a tração Tension strength	kN	100
Resistência a torsão Torsion strength	kN.m	8
Resistência a compressão Compression strength	kN	334
Peso Weight	kg	672

NOTAS:
NOTES:

1. Dimensões em mm.
1. Dimensions in mm.

2. Normas aplicáveis IEC 60168 e IEC 60273.
2. Applicable standarts IEC 60168 and IEC 60273.

3. Cada unidade será marcada com a sua posição de montagem.
3. Each unit will be marked as its assembly position.

3. Os isoladores são fornecidos completos, incluindo os parafusos entre os módulos (exceto os da base).
3. The insulators will be supplied completelly, including the connection bolts between the units (except thos of the base).

Quantitativo para cada Subestação:
SE BACABEIRA: 49 unidades
(17 unidades fornecidas com anel anti-corona)

ITEM ITEM	DESCRIÇÃO DESCRIPTION	QUANT. QUANTITY	PARTE Nº PART Nº	MATERIAL MATERIAL
9	ANEL ANTI-CORONA CORONA RING	01	-	LIGA DE ALUMÍNIO ALUMINUM ALLOY
8	BANDEJA ANTI-CORONA 2 CORONA TRAY 2	01	-	LIGA DE ALUMÍNIO ALUMINUM ALLOY
7	BANDEJA ANTI-CORONA 1 CORONA TRAY 1	01	-	LIGA DE ALUMÍNIO ALUMINUM ALLOY
6	CIMENTO CEMENT	01	-	PORTLAND PORTLAND
5	PARAFUSOS DE CONEXÃO CONNECTING BOLTS	16	-	AÇO CARBONO CARBON STEEL
4	FLANGES FLANGE	06	-	FERRO FUNDIDO, GALVANIZADO A FOGO CAST IRON HOT GALVANIZED
3	UNIDADE 3 UNIT 3	01	-	PORCELANA PORCELAIN
2	UNIDADE 2 UNIT 2	01	-	PORCELANA PORCELAIN
1	UNIDADE 1 UNIT 1	01	-	PORCELANA PORCELAIN

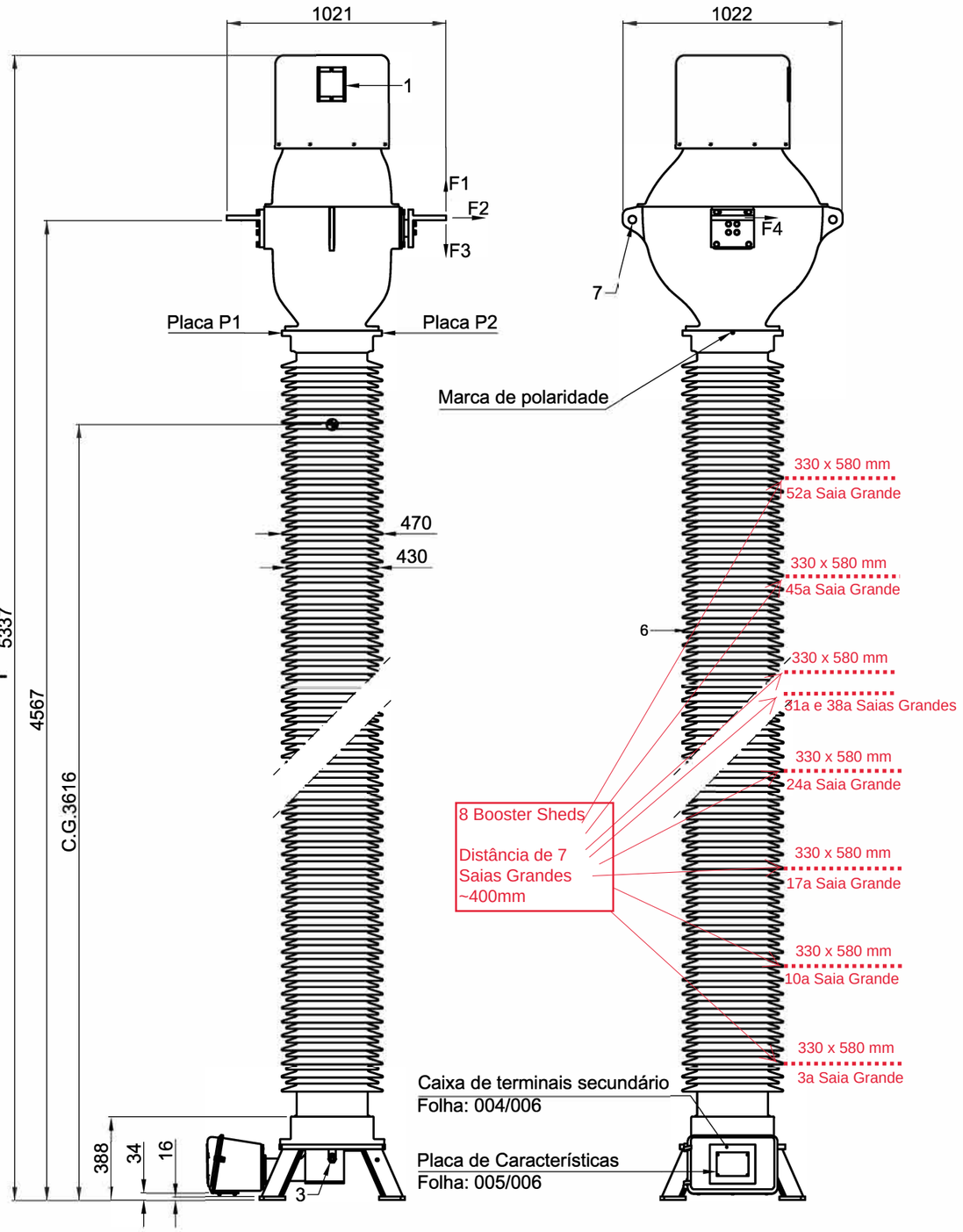
N.º DES. FABRICANTE	ELN-1-FG-BCB-DE-M001-02		
Eletrobras Eletronorte / cobra GRUPO	DES. Nº. MAF-108-00117-IP-703	FOLHA 2/4	REV. 1

QUALQUER MODIFICAÇÃO, PARCIAL OU TOTAL, SEM A PRÉVIA AUTORIZAÇÃO, POR ESCRITO, DA GERÊNCIA DE PROJETO DE PROTEÇÃO, CONTROLE E AUTOMAÇÃO, ISENTA A MESMA DA RESPONSABILIDADE TÉCNICA E DA EXATIDÃO DO PROJETO.

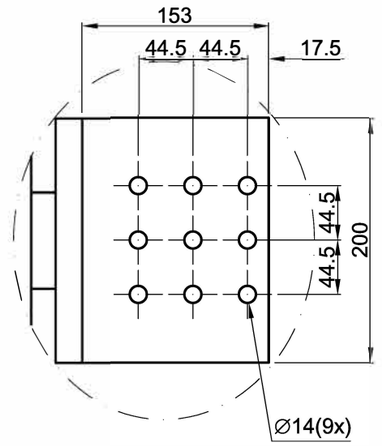
O conteúdo deste documento é de propriedade da ELETRONORTE. É proibida a sua utilização ou reprodução parcial ou total sem o seu prévio consentimento.

Posição dos Booster Sheds

Transformador de Corrente 500kV

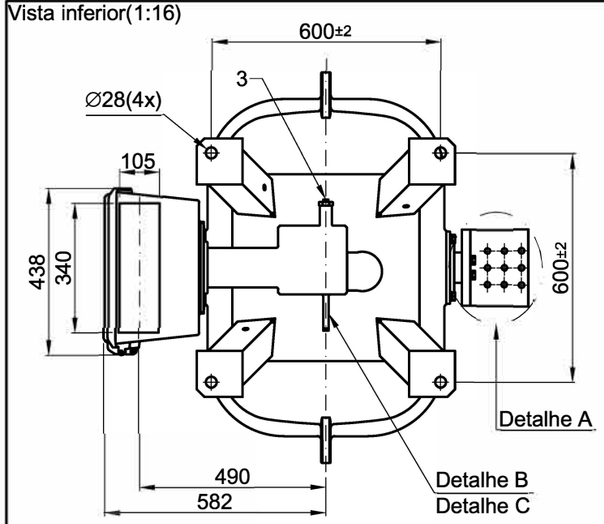


Detalhe A(1:5) - Terminal Primário

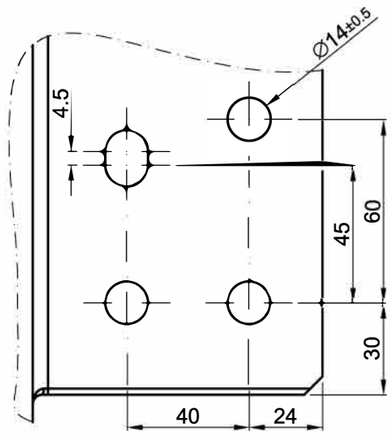


Material: Aluminio, espessura 22mm

Vista inferior(1:16)

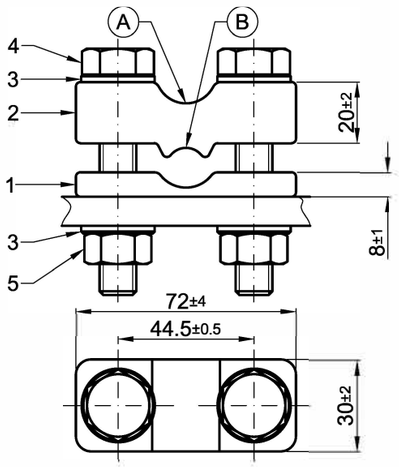


Detalhe B(1:2) - Terminal de aterramento



Material: Aluminio, espessura 14mm

Detalhe C(1:2) - Conector de aterramento GHS-400A



Notas:
1. Instalação: Aparafusado
2. Torque de aperto no item 05 = 4,7 daNxm
3. Aplicação em aterramento de cabo:
   Canaleta "A": cabo CU 250 a 600MCM/CU(120 a 300mm²)
   Canaleta "B": cabo CU 2 a 4/0AWG/CU(35 a 120mm²).
4. Esforços admissíveis em todos os sentidos: 410daN
5. Quantidade: 1 peça por equipamento

Controle: C-7128

Item	Descrição	Qtd	Material	Obs
5	Porca sextavada M12	2	Aço Inox	-
4	Parafuso cab. sext. M12x70	2	Aço Inox	-
3	Arruela de pressão Ø12	4	Aço Inox	-
2	Contra corpo	1	Bronze estanhado	ASTM-C83600
1	Corpo	1	Bronze estanhado	ASTM-C83300

Notas:
1. Indicador de nível de óleo(direita de P1)
2. Óleo: Naftênico Nytro 4000A
   Massa: 320kg - Volume: 364 Litros
3. Válvula de drenagem e retirada de amostra de óleo
4. Esforços admissíveis nos terminais primarios:
   F1=F2=F3=F4=2500N
5. Tolerâncias não indicadas ±2%
6. Isolador: Porcelana cor marrom
   Distância de escoamento: ≥14443mm
   Distância de arco: 3570mm
7. Ponto para içamento: olhais de içamento Ø36mm

Desenhado por	Verificado por	Aprovado por	Número Desenho Cliente	Referência do Cliente
PCM	TAA	TAA	ARG-1-EQ-BCB-DE-E401	N/A
03/07/2017	03/07/2017	03/07/2017		

Descrição

ARGO TRANSMISSÃO DE ENERGIA S.A.

TRANSFORMADOR DE CORRENTE OSKF-550

DESENHO DIMENSIONAL

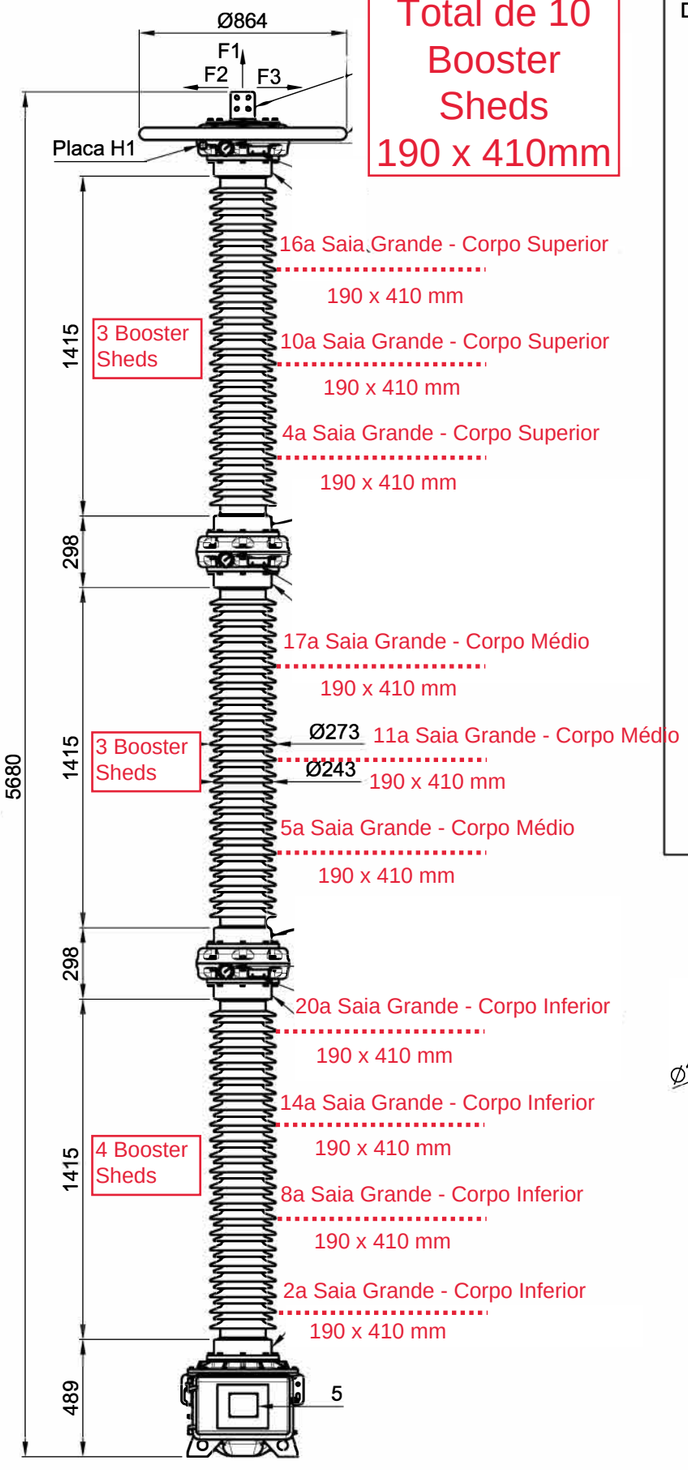
Unidade Local		Unidade: mm	Local
AIB		Formato: A3	N/A
Referência	Massa (kg)	Escala: 1:12	Nome da folha
HV600108-03	1560	Folha: 003/006	N/A
Número Desenho			Revisão N°
5192225398.120			00

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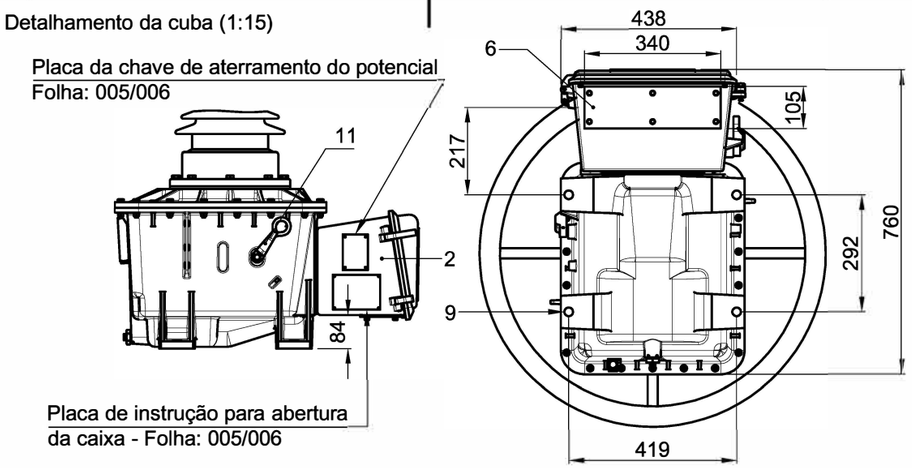
Posição dos Booster Sheds

Transformador de Potencial Capacitivo 500kV

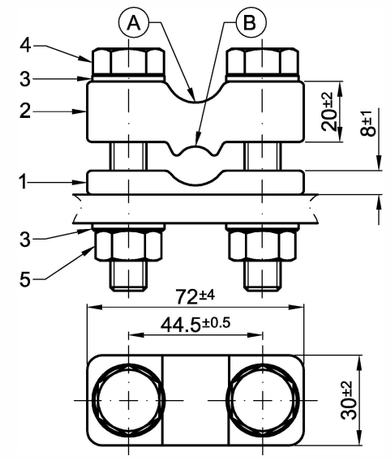


Total de 10 Booster Sheds 190 x 410mm

Detalhamento da cuba (1:15)



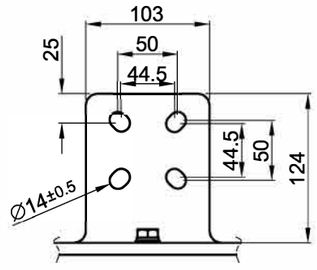
Detalhe C - Conector de aterramento GHS-400A (1:2)



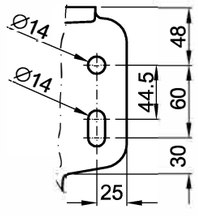
Notas:
1. Instalação: Aparafusado
2. Torque de aperto no item 05 = 4,7 daNxm
3. Aplicação em aterramento de cabo:
   Canaleta "A": cabo Cu 250 a 600MCM/Cu (120 a 300mm²)
   Canaleta "B": cabo Cu 2 a 4/0AWG/Cu (35 a 120mm²)
4. Esforços admissíveis em todos os sentidos: 410daN
5. Quantidade: 1 peça por equipamento

Referência: C-7128

Item	Descrição	Qtd	Material	Obs
5	Porca sextavada M12	2	Aço inox	-
4	Parafuso cab. sext. M12x70	2	Aço inox	-
3	Arruela de pressão Ø12	4	Aço inox	-
2	Contra corpo	1	Bronze estanhado	ASTM-C83600
1	Corpo	1	Bronze estanhado	ASTM-C83300



Detalhe A (1:5)
Terminal primário



Detalhe B (1:5)
Terminal de aterramento

Itens:
1. Cuba, alumínio fundido
2. Caixa de terminais secundários, alumínio
   Folha: 004/006
3. Terminal primário, alumínio, espessura 13mm
4. Terminal de aterramento, alumínio, espessura 10mm
5. Placa de Características, aço inox
   Folha: 005/006
6. Tampa inferior removível, alumínio
7. Indicador de nível de óleo da cuba
8. A-Bujão para enchimento de óleo
   B-Válvula para drenagem e retirada de amostra de óleo
9. Furos para fixação da cuba a estrutura Ø22mm
10. Olhais de suspensão Ø40mm
11. Chave de aterramento do potencial
12. Indicador de nivel de óleo do módulo capacitivo
13. Anel anti-corona, alumínio

Notas:
- 3 Isoladores cor marrom RAL 8016 (SHC I4 N3)
  Distância de escoamento: 13750mm
  Distância de arco: 4245mm
- Esforços admissíveis no terminal primário: F1=F2=F3=1000N
- Terminal "H2" aterrado dentro da caixa de terminais secundários
- Tipo de óleo isolante:
  Unidade eletromagnética: Naftênico NYTRO 4000A
  Unidade capacitiva: SAS-60E sintético
- Tolerâncias não indicadas ±2%

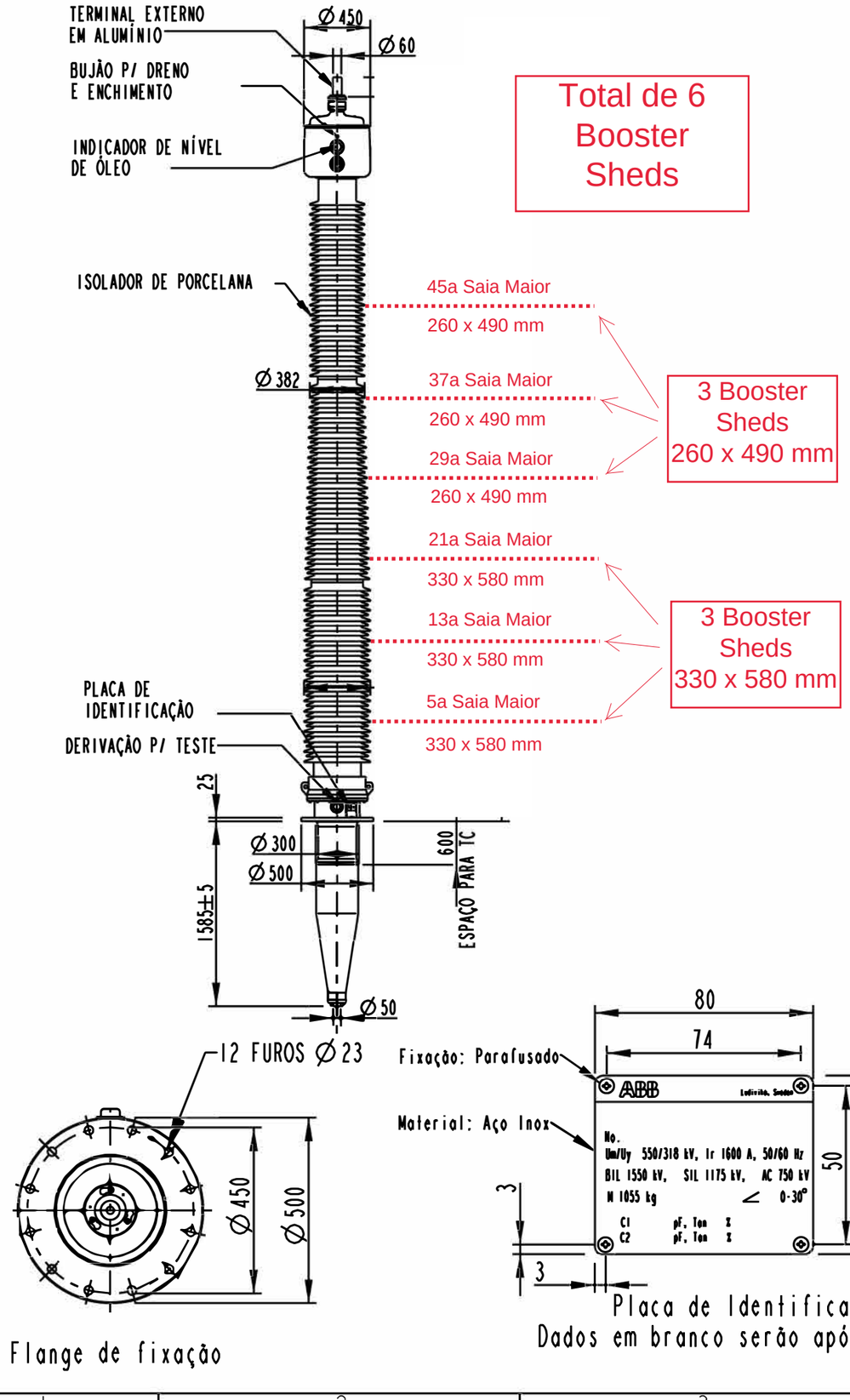
Desenhado por	Verificado por	Aprovado por	Número Desenho Cliente	Referência do Cliente	Descrição	Unidade Local		Unidade: mm	Local
WDS	HHR	TAA	ARG-1-EQ-SUB-DE-E301	N/A	ARGO TRANSMISSÃO DE ENERGIA S.A.	AIB		Formato: A3	N/A
29/06/2017	29/06/2017	29/06/2017	ARGO / Grid Solutions		TRANSFORMADOR DE POTENCIAL CAPACITIVO OTCF-550	Referência 4108658-015	Massa(kg) 579	Escala: 1:25 Folha: 003/006	Nome da folha N/A
					DESENHO DIMENSIONAL	Número Desenho 5192225398.20			Revisão N° 00

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Posição dos Booster Sheds

Bucha do Transformador 500kV



Total de 6 Booster Sheds

COR ACAD	COR IMP.	ESP. IMP.
1	7	0.10
2	7	0.20
3	7	0.30
4	7	0.40
5	7	0.50
6	7	0.60
7	7	0.20
9	7	0.05
10	10	0.30
11	7	0.80
30	7	0.30
41	7	0.20
111	7	1.00
251	251	0.30
254	254	0.30

BUCHA TIPO GOE(2) 1550 - 1175 - 1600 - 0.6			
FABRICANTE	-		ABB
TENSÃO NOMINAL (Ur)	kV		550
CORRENTE NOMINAL (Ir)	A		1600
TENSÃO FASE - TERRA (Uy)	kV		318
IMPULSO ATMOSFÉRICO (1,2 x 50us) (LI)	kV		1550
IMPULSO DE MANOBRA SOB CHUVA (SI)	kV		1175
TENSÃO APLICADA SOB CHUVA (AC)	kV	RMS	750
DISTÂNCIA DE ESCOAMENTO	mm		15200±350
COMPRIMENTO DISPONÍVEL PARA ACOMODAÇÃO DO TC	mm		600
PORCELANA	-		MARROM
NORMA	-		IEC 60137
CARGA MÁXIMA PERMISSÍVEL EM OPERAÇÃO NO ÂNGULO DE MONTAGEM	N	- / -	0° / 5000 — 30° / 3900
CARGA MÁXIMA APLICADA EM TESTE, 1 MINUTO, DE ACORDO IEC 60137	N		10000
CAPACITANCIA NOMINAL ENTRE CONDUTOR E TAP DE TESTE (C1, ± 10%	pF		505
MASSA	kg		1055

Nº	Data	Revisão	Elaborado Por	Verificado Por	Aprovado Por
00	30/05/17	REVISADO CONF. ARG-1-EQ-SUB-DE-M016-0B (LSC)	A.Tosetto	E.Nomura	E.Nomura
0B	24/04/17	REVISADO CONF. ARG-1-EQ-SUB-DE-M016-0A (LSC)	L.Takahashi	E.Nomura	E.Nomura
0A	10/03/17	EMISSÃO INICIAL	L.Takahashi	E.Nomura	E.Nomura

ARGO ABB

PROJETO EXECUTIVO

Elab. L.Takahashi — Verif. E.Nomura
Aprov. E.Nomura
1ZXY032164-B7527 — E-1653075

cobra BRASIL
ARG-1-EQ-SUB-DE-M016 — Rev. 00
Elab. — Verif.
Aprov.
Resp. Téc. — Nº Crea — Data

EDITAL DE LEILÃO Nº 13/2015 - LOTE A
INSTALAÇÕES DO SISTEMA DE TRANSMISSÃO PARA ESCOAMENTO POTENCIAL EÓLICO DOS ESTADOS DO MARANHÃO, PIAUÍ E CEARÁ
SEs BACABEIRA, PARNAÍBA III, ACARAÚ III, TIANGUÁ II e PECÉM II

SE PARNAÍBA III

BUCHA AT
TRANSFORMADORES SVC 500 kV - 65/80/100 MVA

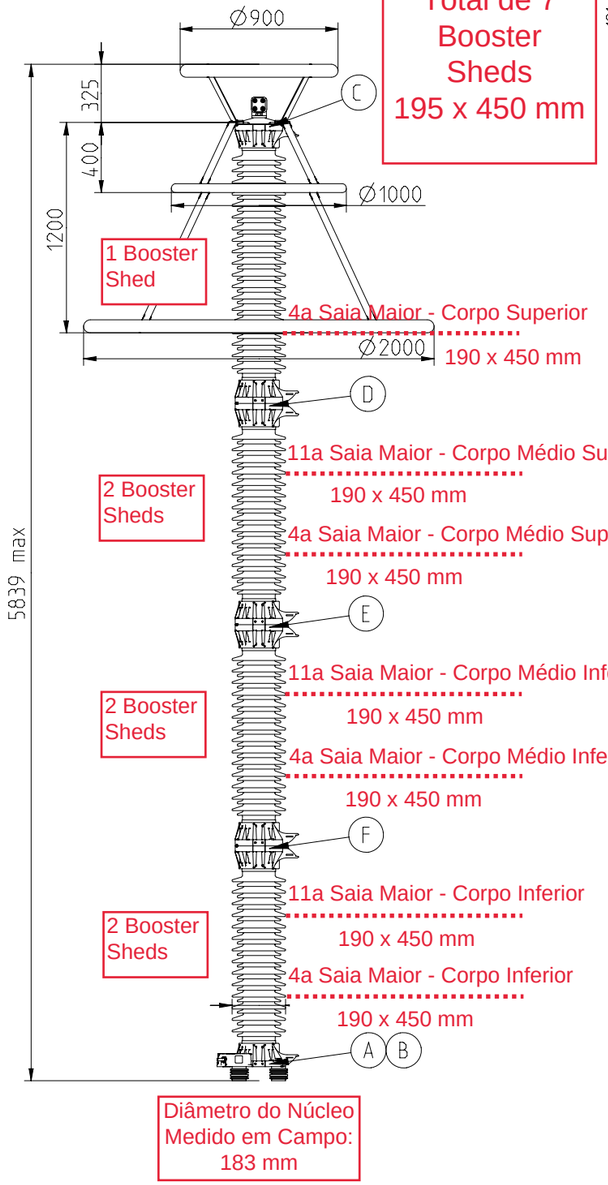
Nº DOC.	Rev.	Folha	Escala
ARG-1-EQ-SUB-DE-M016	00	1/1	S/C

Posição dos Booster Sheds

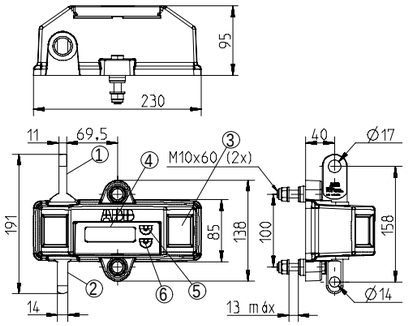
Pára Raios 500kV

☒ APROVADO
☐ DEVOLVIDO COM RESSALVAS
☐ NÃO APROVADO
☐ CANCELADO

DE 16 / 08 / 18
Renato de Sousa Nascimento
P/ ENG. CHEFE DA DEPS

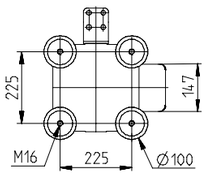


Total de 7 Booster Sheds 195 x 450 mm

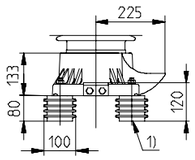


CONTADOR DE DESCARGAS EXCOUNT-I
1HSA440000-J

1 - Terminal para ligação no conector de aterramento do pára-raios
2- Terminal de aterramento
3 - Painel Solar
4 - Display contador de operações / Currente de Fuga
5 - Diodo corrente fuga
6 - Diodo indicador de contagem
7 - Instalação do contador de operação conforme pagina 24 do manual de instruções ARG-1-EQ-SUB-MN-E501
8 - Conectores do contador de descarga não incluso no fornecimento.



DETALHE DE FURAÇÃO



BASE ISOLANTE
1HSA430000-C
Resina epoxi

1) M16 parafusos de ancoragem (chumbadores) NÃO inclusos no fornecimento. Exige chumbadores rosquedos 15-20 mm de penetração.

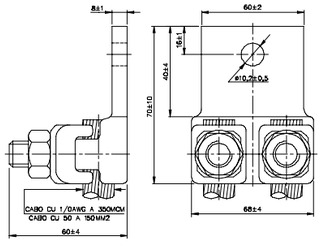
Pára-raios
EXLIM T420-BH550
Invólucro de porcelana
Dist. de escoam: 14287 mm
Peso: 595 kg
Ensaio de rotina conforme: IEC 60099-4
ESFORÇO MÁXIMO NO TERMINAL: 2000 N

C — ABB AB — TOP UNIT — Ano: 2018
Surge Arrester EXLIM T420-BH550 Ur. 160kV
Nº XXXXXXX /1 Contrato nº:
Made in Sweden

D — ABB AB — MIDDLE UNIT 2 — Ano: 2018
Surge Arrester EXLIM T420-BH550 Ur. 104kV
Nº XXXXXXX /2 Contrato nº:
Made in Sweden

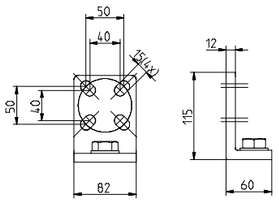
E — ABB AB — MIDDLE UNIT 3 — Ano: 2018
Surge Arrester EXLIM T420-BH550 Ur. 84kV
Nº XXXXXXX /3 Contrato nº:
Made in Sweden

F — ABB AB — BASE UNIT — Ano: 2018
Surge Arrester EXLIM T420-BH550 Ur. 72kV
Nº XXXXXXX /4 Contrato nº:
Made in Sweden



Torque máximo 2,88 kgf.
Fabricação : Delta Star
Material : Cobre Estanhado
Tipo : FUPP-150-AECF
CONECTOR ATERRAMENTO

Conector para cabos de 50-150mm²



TERMINAL DE LINHA
1HSA410000-B
Alumínio com acessórios de aço inoxidável
Conector de linha não incluso no fornecimento

A — ABB Power Technologies AB
Pára-raios EXLIM T420-BH550 / NBI: 2352kV
No:XXXXXXX Ano: 2018
Classe 20 kA Ur: 420kV Uc: 336kV
Corrente alívio sobrepressão: 65kA
Cap. de energia 15 kJ/kV
Corr. de fuga res. <0.2 mA peak (25ºC)
Contrato nº: Peso: 595kg
Man. de Instruções 1HSA801 080-1pt Made in Sweden

B — ABB

Placa de identificação fixada por rebite

Subestação:	Qtd.:
SE TIANGUÁ II	6

02	16/08/18	APROVADO - CHESF	D.R.	A.C.	S.C.
01	02/08/17	CONFORME COMENTARIOS	D.R.	A.C.	S.C.
00	29/05/17	EMISSÃO INICIAL	D.R.	A.C.	S.C.
N°	Data	Revisão	Elaborado Por	Verificado Por	Aprovado Por

ARGO

PROJETO EXECUTIVO

Elab. D.R. Verif. A.C.
Aprov. S.C.

LEILÃO Nº 13/2015 - LOTE A
INSTALAÇÕES DO SISTEMA DE TRANSMISSÃO PARA ESCOAMENTO POTENCIAL EÓLICO DOS ESTADOS DO MARANHÃO, PIAUÍ E CEARÁ
SEs BACABEIRA, PARNAÍBA III, ACARAÚ III, TIANGUÁ II e PECÉM II

ABB cobra GRUPO

2GDB212E-1651056.001 Rev. 02

Elab. D.R. Verif. A.C.
Aprov. S.C.
Resp. Téc. D.R. N° Crea - Data 29/05/17

PÁRA-RAIOS
Desenho Dimensional EXLIM T420-BH550
PÁRA-RAIOS EXLIM

N° DOC.	Rev.	Folha	Escala
CHS-1-EQ-TGD-DE-E502	02	1	S/ESC.

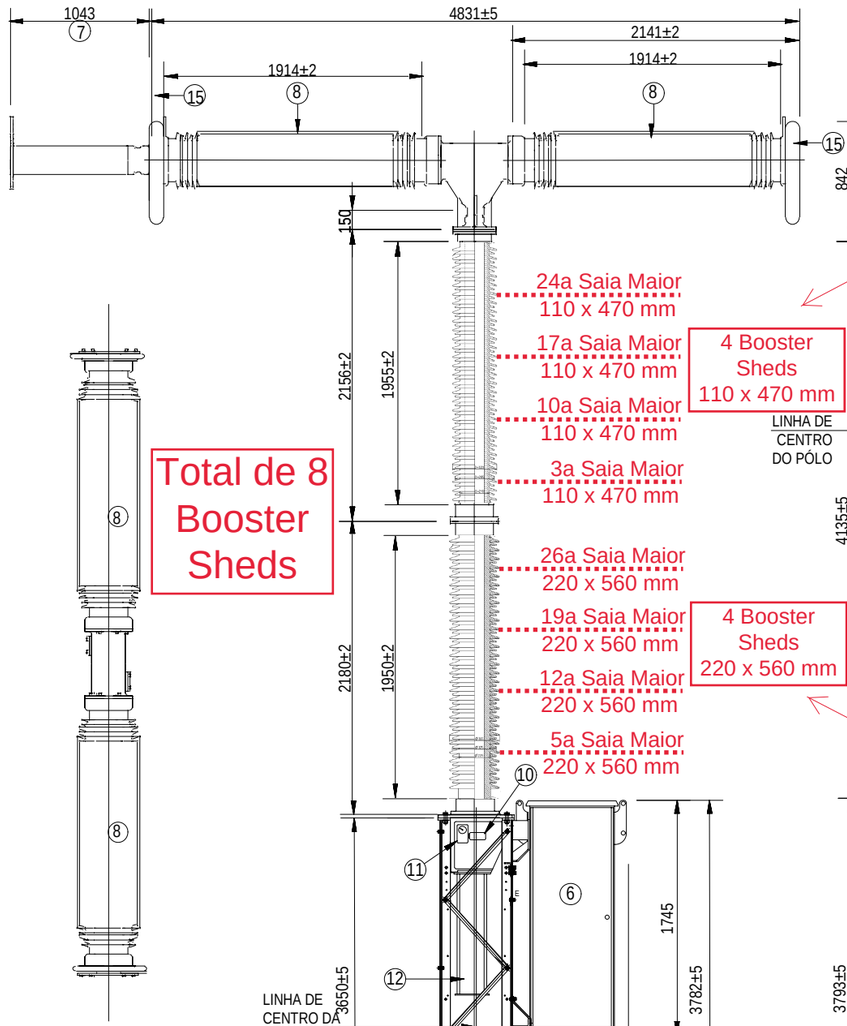
Carimbo.dwg

Posição dos Booster Sheds

Disjuntor 500kV

Mantemos o direito de propriedade deste documento anexos. Eles não devem, sem nossa autorização escrita, serem copiados, reproduzidos, comunicados a terceiros ou postos a sua disposição sob pena de o infrator responder pelos seus atos nos termos da lei

MASSAS DO DISJUNTOR (em kg)				
PÓLO	MEC. OPERAÇÃO	ESTRUTURA	SF6	TOTAL
1902x3	460x3	145x3	29x3	~8408



DETALHE SUPERIOR DO PÓLO SEM OS ANÉIS DE EQUALIZAÇÃO

VISTA FRONTAL DO PÓLO

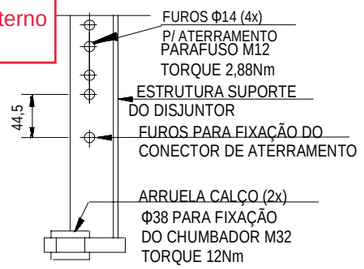
VISTA LATERAL DO PÓLO

Observação:

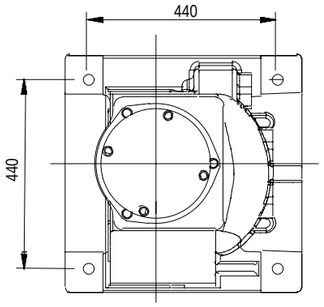
O Diâmetro interno do Booster Shed de 110 x 470 mm terá que ser cortado em 55 mm para ficar com diâmetro interno de 220 mm

Observação:

O Diâmetro interno do Booster Shed de 220 x 560 mm terá que ser cortado em 10 mm para ficar com diâmetro interno de 240 mm



ATERRAMENTO DA ESTRUTURA



VISTA SUPERIOR DE UM PÓLO COM DETALHE DE FIXAÇÃO NA ESTRUTURA

ALTURA DA PARTE ENERGIZADA EM RELAÇÃO À BASE

Subestação:	VÃOS	MODELO	Qtd.:
SE BACABEIRA	752AX / 752AY	HPL550B2	1
SE PARNAIBA III	752DX	HPL550B2	6
SE ACARAÚ III	752BX/752BY/752CX/ 752CY/752DX/752DY	HPL550B2	2
SE TIANGUÁ II	752AX/752AY	HPL550B2	2

LEGENDA

1. ENTRADA DE CABOS
2. TERMINAL DE ALUMíNIO ALTA PUREZA
3. CARGA NO TERMINAL: MAX 3000 N EM QUALQUER DIREÇÃO.
4. FUROS P/ CONECTOR DE ATERRAMENTO
5. ACESSO AO CARREG. MANUAL
6. ARMÁRIO DE ACIONAMENTO C/ MECANISMO MODELO BLG1002A. GRAU DE PROTEÇÃO IP-55.
7. ESPAÇO LIVRE PREVISTO P/ MANUTENÇÃO.
8. ISOLADOR DA CÂMARA DE INTERRUPÇÃO
9. ISOLADOR SUPORTE
10. INDICADOR DE DISJUNTOR ABERTO/FECHADO.
11. MONITOR DE DENSIDADE (INSTALADO NO CHASSI DO DISJUNTOR).
12. MOLA DE ABERTURA DO PÓLO.
13. ESTRUTURA SUPORTE GALVANIZADA A QUENTE SEM PINTURA.
14. FORÇAS DINÂMICAS NOS CHUMBADORES (EM OPERAÇÃO):
    APLICAÇÃO DO TERMINAL PRIMARIO
    16500N - HORIZONTAL
    180000N - VERTICAL
15. ANEL DE EQUALIZAÇÃO EM ALUMÍNIO.
16. VÁLVULA DE ALÍVIO DE SOBREPRESSÃO

NOTAS:

1) DIMENSÕES EM MILÍMETROS;
2) DISJUNTOR SF6 HPL550B2 - MECANISMO DE OPERAÇÃO BLG1002A E SINCRONIZADOR PWC600;
3) Acessórios para enchimento, drenagem e enchimento conforme manual de instruções

REV.	DESCRIÇÃO	DATA	PROJ	VERIF.	APROV
02	APROVADO	15/06/18	D.R.	A.C.	S.C.
2A	CONFORME COMENTÁRIOS	15/12/17	D.R.	A.C.	S.C.
01	APROVADO	22/06/17	R.R.	D.R.	S.C.

LEILÃO No 13/2015 – LOTE A
SE Bacabeira /SE Parnaíba III / SE Acaraú III / SE Pecém II / SE Tianguá II
Disjuntor HPL550 - Mecanismo Operação BLG 1002A
Dimensional do Polo Sem Resistor

DESENHO Nº: ARG-1-EQ-SUB-DE-E101
Elemento PEP: E-1651056.001
Tipo do documento: Dimensionais
FOLHA: 2 DE: 10

Instalação dos Booster Sheds

Treinamento de Instalação de Booster Sheds



TxΠ

Rui Sen ®

- Função do Booster Shed:
  - Aumentar distância de Arco a Seco;
  - Aumentar a distância de Escoamento;
  - Evitar a formação de “coluna de água” em chuvas intensas

* Melhorar o Desempenho Elétrico do Isolador *

TxΠ

Rui Sen ®

- **Vantagens adicionais para a Argo:**
  - Permitir lavagem mais segura do isolador;
  - Prover uma distancia de escoamento em material composto, mais resistente a poluição salina.

TxΠ

Rui Sen ®

- Instalação Simples, porém requer cuidados:
  - Basicamente um processo de limpeza, colagem, acabamento e posicionamento correto;
  - Instalação em ambiente seco (sem chuva);
  - Apenas 8 passos:

- Passo 1:
  - Proteger o núcleo para melhor acabamento
    - Economiza tempo de limpeza no caso de sujar o núcleo com cola no processo de espalhamento



- Passo 2:
  - Proteger o perímetro da saia para melhor acabamento
    - Economiza tempo de limpeza no caso de sujar o núcleo com cola no processo de espalhamento



- Passo 3:
  - Colocar a cola (perto do núcleo)
    - Ajuda no espalhamento (talvez dois círculos de cola sejam necessários em saias grandes).



- Passo 4:
  - Espalhar a cola (recobrir toda a saia entre fitas, não deixar vazios)
    - Permite colagem completa do booster shed à saia do isolador



- Passo 5:
  - Posicionar o Booster Shed (colocar os pinos antes na parte inferior)
    - Momento de centralizar bem e ajustar a o paralelismo entre saias do isolador e booster shed



- Passo 6:
  - Colar a emenda
    - Momento de posicionar os pinos com os orifícios superiores



- Passo 7:
  - Pressionar os Pinos
    - Travamento da Emenda



TxΠ

- Passo 8:
  - Acabamento
  - Parte interna;
  - Parte externa: mais cuidado e capricho – sem falhas, furos e bolhas na cola)
    - Retirada dos crepes, colocação de cola nas extremidades onde falta e limpeza do excesso de cola



TxΠ

- Recomendações / Informações Adicionais
  - Tempo para inicio de Cura da Cola:
    - De 10 a 15 minutos = Tempo para ajustes
  - Utilizar Pano Seco para limpeza
    - Não usar solventes ou detergentes
  - Uso de luvas de Latex:
    - Ajuda em não ter contato com os solventes da cola e ajuda na economia de tempo de limpeza das mãos (troca de luva frequente)
  - Instalação dos Booster Sheds de Cima para Baixo na coluna de Isolador
    - Facilita o trabalho e evita danos aos Booster Sheds já instalados.
  - Não posicionar as emendas em posições coincidentes (girar um pouco para o lado a cada Booster Shed – evitar que as emendas de Booster Sheds da mesma coluna estejam na mesma vertical)
  - É possível que os passos envolvendo as fitas crepes possam ser suprimidos depois de vários Booster Sheds instalados pela boa experiência do instalador
  - É possível passar adicionalmente dois anéis de cola (um perto do centro e outro perto da extremidade da saia) depois do espalhamento da cola (passo 4) para ajudar nos acabamentos de perímetro: Estes anies de cola “vazam” para dentro e para fora formando dois excessos de cola nos perímetros do Booster shed facilitando o espalhamento com o dedo e ajudando os acabamentos interno e externo (testado no treinamento)
  - Para acabamento interno, caso as saias sejam muito próximas, não é possível aplicar crepe no núcleo e fazer o acabamento com o dedo. Neste caso o acabamento interno devera ser feito com uma espátula fina.

TxΠ



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(41) 99978-8888

Plano de Inspeção e Testes Aprovado

ARGO Booster Sheds								
	# PLANO DE INSPEÇÃO E TESTES - BOOSTER SHEDS							
PIT 20191209 REV02	**Ref. Ruisen: Not Applicable**						**Data / *Date*: 06/01/2020**	
1 ENSAIOS DE RECEBIMENTO ***ACCEPTANCE TESTS***								
1. 1. Booster Sheds ***Booster Sheds***								
DESCRIÇÃO DO ENSAIO ***TEST* DESCRIPTION**	**DESENHO** ***DRAWING***	**Critério de Aprovação** ***Aproval Criteria***	**Tamanho do Lote** ***Batch Size***	**Amostragem** ***Sampling***	**Norma / ET ARGO** ***Standard / ARGO specification***	**DATA DO ENSAIO** ***TEST DATE***	**LOCAL DO ENSAIO** ***PLACE OF TESTS***	
1. 1. 1. Aparência Geral / Dimensional ***Appearance Inspection / Dimensions***								
Item 1 - Booster Shed 130 x 410mm - Secionadora (Suporte) *Item 1 - Booster Shed 130 x 410mm - Disconnect (Support)*	DRG 20191209 rev02	Item 5.1.2, Drawings	2974	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 2 - Booster Shed 110 x 350mm - Secionadora (Rotativo) *Item 2 - Booster Shed 110 x 350mm - Disconnect (Rotating)*	DRG 20191209 rev02	Item 5.1.2, Drawings	1487	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 3.1 - Booster Shed 110 x 470mm - Disjuntor (topo) *Item 3.1 - Booster Shed 110 x 470mm - Breaker (top)*	DRG 20191209 rev02	Item 5.1.2, Drawings	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 3.2 - Booster Shed 220 x 560mm - Disjuntor (base) *Item 3.2 - Booster Shed 220 x 560mm - Breaker (bottom)*	DRG 20191209 rev02	Item 5.1.2, Drawings	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 4 - Booster Shed 330 x 580mm - Transformador de Corrente *Item4 - Booster Shed 330 x 580mm - Current Transformer*	DRG 20191209 rev02	Item 5.1.2, Drawings	555	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 5 - Booster Shed 190 x 410mm - Transformador de Potencial Capacitivo *Item 5 - Booster Shed 190 x 410mm - Capacitive Potential Transformer*	DRG 20191209 rev02	Item 5.1.2, Drawings	294	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 6 - Booster Shed 195 x 450mm - Para Raios 550kV *Item 6 - Booster Shed 195 x 450mm - 550kV Surge Arrester*	DRG 20191209 rev02	Item 5.1.2, Drawings	427	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 7.1 - Booster Shed 260 x 490mm - Bucha AT Transformador - Fases *Item 7.1- Booster Shed 260 x 490mm - Transformer Bushings - Phases*	DRG 20191209 rev02	Item 5.1.2, Drawings	156	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 7.2 - Booster Shed 330 x 580mm - Bucha AT Transformador - Fases *Item 7.2- Booster Shed 330 x 580mm - Transformer Bushings - Phases*	DRG 20191209 rev02	Item 5.1.2, Drawings	78	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
Item 8 - Booster Shed 160 x 450mm - Isolador Coluna Suporte *Item 8 - Booster Shed 160 x 450mm - Station Post Insulator*	DRG 20191209 rev02	Item 5.1.2, Drawings	3318	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003	09-10/01/2020	Ruisen - China	
DESCRIÇÃO DO ENSAIO ***TEST***	**DESENHO** ***DRAWING***	**Critério de Aprovação** ***Aproval Criteria***	**Tamanho do Lote** ***Batch Size***	**Amostragem** ***Sampling***	**Norma / ET ARGO** ***Standard / ARGO specification***	**DATA DO ENSAIO** ***TEST DATE***	**LOCAL DO ENSAIO** ***PLACE OF TESTS***	

ARGO Booster Sheds								
				PLANO DE INSPEÇÃO E TESTES - BOOSTER SHEDS				
PIT 20191209 REV02	**Ref. Ruisen: Not Applicable**						**Data / *Date*: 06/01/2020**	
1. 1. 2. Hidrofobicidade ***Hidrofobicity Nature***								
Item 1 - Booster Shed 130 x 410mm - Secionadora (Suporte) *Item 1 - Booster Shed 130 x 410mm - Disconnect (Support)*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	2974	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	
Item 2 - Booster Shed 110 x 350mm - Secionadora (Rotativo) *Item 2 - Booster Shed 110 x 350mm - Disconnect (Rotating)*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	1487	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	
Item 3.1 - Booster Shed 110 x 470mm - Disjuntor (topo) *Item 3.1 - Booster Shed 110 x 470mm - Breaker (top)*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	
Item 3.2 - Booster Shed 220 x 560mm - Disjuntor (base) *Item 3.2 - Booster Shed 220 x 560mm - Breaker (bottom)*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	
Item 4 - Booster Shed 330 x 580mm - Transformador de Corrente *Item4 - Booster Shed 330 x 580mm - Current Transformer*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	555	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	
Item 5 - Booster Shed 190 x 410mm - Transformador de Potencial Capacitivo *Item 5 - Booster Shed 190 x 410mm - Capacitive Potential Transformer*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	294	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	
Item 6 - Booster Shed 195 x 450mm - Para Raios 550kV *Item 6 - Booster Shed 195 x 450mm - 550kV Surge Arrester*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	427	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	
Item 7.1 - Booster Shed 260 x 490mm - Bucha AT Transformador - Fases *Item 7.1- Booster Shed 260 x 490mm - Transformer Bushings - Phases*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	156	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	
Item 7.2 - Booster Shed 330 x 580mm - Bucha AT Transformador - Fases *Item 7.2- Booster Shed 330 x 580mm - Transformer Bushings - Phases*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	78	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China	

ARGO Booster Sheds	ARGO	TxΠ Rui Sen					
	PLANO DE INSPEÇÃO E TESTES - BOOSTER SHEDS						
PIT 20191209 REV02	**Ref. Ruisen: Not Applicable**					**Data / *Date*: 06/01/2020**	
Item 8 - Booster Shed 160 x 450mm - Isolador Coluna Suporte *Item 8 - Booster Shed 160 x 450mm - Station Post Insulator*	DRG 20191209 rev02 Static Contact Angle > 100 degrees, Grade HC1/HC2	Item 4.1.4 / DL/T 376	3318	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 376	09-10/01/2020	Ruisen - China
DESCRIÇÃO DO ENSAIO ***TEST***	**DESENHO** ***DRAWING***	**Critério de Aprovação** ***Aproval Criteria***	**Tamanho do Lote** ***Batch Size***	**Amostragem** ***Sampling***	**Norma / ET ARGO** ***Standard / ARGO specification***	**DATA DO ENSAIO** ***TEST DATE***	**LOCAL DO ENSAIO** ***PLACE OF TESTS***
1. 1. 3. Resistividade Superficial / *Surface Resistivity*							
Item 1 - Booster Shed 130 x 410mm - Secionadora (Suporte) *Item 1 - Booster Shed 130 x 410mm - Disconnect (Support)*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	2974	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 2 - Booster Shed 110 x 350mm - Secionadora (Rotativo) *Item 2 - Booster Shed 110 x 350mm - Disconnect (Rotating)*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	1487	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 3.1 - Booster Shed 110 x 470mm - Disjuntor (topo) *Item 3.1 - Booster Shed 110 x 470mm - Breaker (top)*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 3.2 - Booster Shed 220 x 560mm - Disjuntor (base) *Item 3.2 - Booster Shed 220 x 560mm - Breaker (bottom)*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 4 - Booster Shed 330 x 580mm - Transformador de Corrente *Item4 - Booster Shed 330 x 580mm - Current Transformer*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	555	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 5 - Booster Shed 190 x 410mm - Transformador de Potencial Capacitivo *Item 5 - Booster Shed 190 x 410mm - Capacitive Potential Transformer*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	294	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 6 - Booster Shed 195 x 450mm - Para Raios 550kV *Item 6 - Booster Shed 195 x 450mm - 550kV Surge Arrester*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	427	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 7.1 - Booster Shed 260 x 490mm - Bucha AT Transformador - Fases *Item 7.1- Booster Shed 260 x 490mm - Transformer Bushings - Phases*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	156	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 7.2 - Booster Shed 330 x 580mm - Bucha AT Transformador - Fases *Item 7.2- Booster Shed 330 x 580mm - Transformer Bushings - Phases*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	78	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
Item 8 - Booster Shed 160 x 450mm - Isolador Coluna Suporte *Item 8 - Booster Shed 160 x 450mm - Station Post Insulator*	DRG 20191209 rev02 ≥1.0 x 10^{12} ohm.m	Item 4.1.5 / GB/T 1692	3318	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 1692	09-10/01/2020	Ruisen - China
DESCRIÇÃO DO ENSAIO ***TEST* DESCRIPTION**	**DESENHO** ***DRAWING***	**Critério de Aprovação** ***Aproval Criteria***	**Tamanho do Lote** ***Batch Size***	**Amostragem** ***Sampling***	**Norma / ET ARGO** ***Standard / ARGO specification***	**DATA DO ENSAIO** ***TEST DATE***	**LOCAL DO ENSAIO** ***PLACE OF TESTS***
1. 1. 4. Dureza Shore ***Shore Hardness***							
Item 1 - Booster Shed 130 x 410mm - Secionadora (Suporte) *Item 1 - Booster Shed 130 x 410mm - Disconnect (Support)*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	2974	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
Item 2 - Booster Shed 110 x 350mm - Secionadora (Rotativo) *Item 2 - Booster Shed 110 x 350mm - Disconnect (Rotating)*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	1487	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
Item 3.1 - Booster Shed 110 x 470mm - Disjuntor (topo) *Item 3.1 - Booster Shed 110 x 470mm - Breaker (top)*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China

ARGO Booster Sheds	ARGO	TxΠ Rui Sen						
	PLANO DE INSPEÇÃO E TESTES - BOOSTER SHEDS							
PIT 20191209 REV02	**Ref. Ruisen: Not Applicable**						**Data / *Date*: 06/01/2020**	
Item 3.2 - Booster Shed 220 x 560mm - Disjuntor (base) *Item 3.2 - Booster Shed 220 x 560mm - Breaker (bottom)*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
Item 4 - Booster Shed 330 x 580mm - Transformador de Corrente *Item4 - Booster Shed 330 x 580mm - Current Transformer*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	555	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
Item 5 - Booster Shed 190 x 410mm - Transformador de Potencial Capacitivo *Item 5 - Booster Shed 190 x 410mm - Capacitive Potential Transformer*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	294	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
Item 6 - Booster Shed 195 x 450mm - Para Raios 550kV *Item 6 - Booster Shed 195 x 450mm - 550kV Surge Arrester*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	427	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
Item 7.1 - Booster Shed 260 x 490mm - Bucha AT Transformador - Fases *Item 7.1- Booster Shed 260 x 490mm - Transformer Bushings - Phases*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	156	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
Item 7.2 - Booster Shed 330 x 580mm - Bucha AT Transformador - Fases *Item 7.2- Booster Shed 330 x 580mm - Transformer Bushings - Phases*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	78	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
Item 8 - Booster Shed 160 x 450mm - Isolador Coluna Suporte *Item 8 - Booster Shed 160 x 450mm - Station Post Insulator*	DRG 20191209 rev02 > 50 Shore A	Item 4.1.6 / GB/T 531,1	3318	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 531,1	09-10/01/2020	Ruisen - China
DESCRIÇÃO DO ENSAIO ***TEST* DESCRIPTION**	**DESENHO** ***DRAWING***	**Critério de Aprovação** ***Aproval Criteria***	**Tamanho do Lote** ***Batch Size***	**Amostragem** ***Sampling***	**Norma / ET ARGO** ***Standard / ARGO specification***	**DATA DO ENSAIO** ***TEST DATE***	**LOCAL DO ENSAIO** ***PLACE OF TESTS***

ARGO Booster Sheds	ARGO	TxΠ Rui Sen						
	PLANO DE INSPEÇÃO E TESTES - BOOSTER SHEDS							
PIT 20191209 REV02	**Ref. Ruisen: Not Applicable**						**Data / *Date*: 06/01/2020**	
1. 1. 5. Flamabilidade ***Flammability***								
Item 1 - Booster Shed 130 x 410mm - Secionadora (Suporte) *Item 1 - Booster Shed 130 x 410mm - Disconnect (Support)*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	2974	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 2 - Booster Shed 110 x 350mm - Secionadora (Rotativo) *Item 2 - Booster Shed 110 x 350mm - Disconnect (Rotating)*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	1487	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 3.1 - Booster Shed 110 x 470mm - Disjuntor (topo) *Item 3.1 - Booster Shed 110 x 470mm - Breaker (top)*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 3.2 - Booster Shed 220 x 560mm - Disjuntor (base) *Item 3.2 - Booster Shed 220 x 560mm - Breaker (bottom)*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	265	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 4 - Booster Shed 330 x 580mm - Transformador de Corrente *Item4 - Booster Shed 330 x 580mm - Current Transformer*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	555	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 5 - Booster Shed 190 x 410mm - Transformador de Potencial Capacitivo *Item 5 - Booster Shed 190 x 410mm - Capacitive Potential Transformer*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	294	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 6 - Booster Shed 195 x 450mm - Para Raios 550kV *Item 6 - Booster Shed 195 x 450mm - 550kV Surge Arrester*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	427	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 7.1 - Booster Shed 260 x 490mm - Bucha AT Transformador - Fases *Item 7.1- Booster Shed 260 x 490mm - Transformer Bushings - Phases*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	156	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 7.2 - Booster Shed 330 x 580mm - Bucha AT Transformador - Fases *Item 7.2- Booster Shed 330 x 580mm - Transformer Bushings - Phases*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	78	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
Item 8 - Booster Shed 160 x 450mm - Isolador Coluna Suporte *Item 8 - Booster Shed 160 x 450mm - Station Post Insulator*	DRG 20191209 rev02 FV-0	Item 4.1.7 / GB/T 10707	3318	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 GB/T 10707	09-10/01/2020	Ruisen - China	
1. 2. Tubo de Cola ***Glue***								
DESCRIÇÃO DO ENSAIO ***TEST* DESCRIPTION**	**DESENHO** ***DRAWING***	**Critério de Aprovação** ***Aproval Criteria***	**Tamanho do Lote** ***Batch Size***	**Amostragem** ***Sampling***	**Norma / ET ARGO** ***Standard / ARGO specification***	**DATA DO ENSAIO** ***TEST DATE***	**LOCAL DO ENSAIO** ***PLACE OF TESTS***	

ARGO Booster Sheds								
	# PLANO DE INSPEÇÃO E TESTES - BOOSTER SHEDS							
PIT 20191209 REV02	**Ref. Ruisen: Not Applicable**						**Data / *Date*: 06/01/2020**	
1. 2. 1. Adesão ***Adhesion***								
Qualquer dos tubos de Cola Any Glue container	Não aplicável / Not Applicable	Item 4.2.3 / DL/T 627	1640	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 627	09-10/01/2020	Ruisen - China	
1. 2. 2. Tempo de Cura ***Curing Time***								
Qualquer dos tubos de Cola Any Glue container	Não aplicável / Not Applicable	Item 4.2.3 / GB/T 6753,2	1640	Amostragem Conforme IEC 60383 *Sampling According IEC 60383*	ARG1-4-GR-GER-ET-E003 DL/T 627	09-10/01/2020	Ruisen - China	

ARGO Booster Sheds		
	# PLANO DE INSPEÇÃO E TESTES - BOOSTER SHEDS	
PIT 20191209 REV02	**Ref. Ruisen: Not Applicable**	**Data / *Date*: 06/01/2020**

CLÁUDIO DA COSTA TEIXEIRA
CREA SP-5060105822/D

Histórico de revisões
Revision Historical Data

Revisão Revision	Descrição Description	Data Date
--	Emissão Inicial Innitial emission of drawing	12/09/2019
01	Inseridas as amostragens por tipo de Booster Shed Included the sampling quantities per Booster Shed Model	03/01/2020
02	Inserido os valores a serem atendidos nos ensaios na coluna "Desenho"; Alterado o valor da resistividade superficial do teste 1.1.3; incluído o item 3.1 Disjuntor (topo) Included the approval limits for the tests on the column "Drawing"; Revised the value of Superficial Resistance on test 1.1.3; Included item 3.1 Breaker (top)	06/01/2020

Relatório de Ensaios de TIPO

TEST REPORT

CEPRI-SY6-2019-031

Sample Name: Silicone Rubber Booster Shed

Sample Model: HEY_16

Manufacturer: Fujian Ruisen New Materials Co., Ltd.

Commission Unit: Fujian Ruisen New Materials Co., Ltd.

Test Type: Type test

China Electric Power Research Institute

Power Industry Equipment and Instrument Quality Testing and Testing Center

June 2019

TEST REPORT

Sample Name	Silicone Rubber Booster Shed	Sample Model	HEY_16
Client	Fujian Ruisen New Materials Co., Ltd.	Manufacturer Address	HeAn, District, Industrial Area, Zhangping, Fujian
Manufacturer	Fujian Ruisen New Materials Co., Ltd.	Test Type	Type Test
Sample Date	29th May, 2019	Sampling Method	Send by Client
Sample Number	SY6-19/05/30-002-01-45	Quantity	45 pcs
Sample State	In good condition	Test Date	30th May to 15th June, 2019
Test Item	For details, see Page 2		
Test Standard	DL/T 376 General technical requirements of silicone rubber insulation materials for composite insulators (EQV IEC 62073)		
Test Result	According to the test standard, the tested items meet the requirements and qualify.		
Remarks			

Auditor: Chief Inspector: Lister:

Test Item & Results

No.	Test Item	Test Result	Page No.
1	Tensile strength & Elongation	Good	Page 4
2	Tear strength	Good	Page 4
3	Shore hardness	Good	Page 5
4	Combustibility	Good	Page 5
5	Hydrophobicity	Good	Page 6
6	Volume resistivity	Good	Page 9
7	Breakdown strength	Good	Page 9
8	Tracking resistance & electrical erosion	Good	Page 9
	Blank following		

Contents

1. Tensile strength & Elongation Test
2. Tear strength Test
3. Shore hardness Test
4. Combustibility Test
5. Hydrophobicity Test
6. Volume resistivity Test
7. Breakdown strength Test
8. Tracking resistance & electrical erosion Test

According to the standard DL/T 376 General technical requirements of silicone rubber insulation materials for composite insulators (EQV IEC 62073) and the requirements of the client, the Power industry equipment and instrument quality testing and Testing Center has tested the silicone rubber booster shed sent by Fujian Ruisen New Materials Co., Ltd. The sample number and the corresponding number in the report are shown in Table 1.

Table 1. Sample Number and Corresponding Number in the Test Report

Sample Number	Corresponding Number in the Test Report
SY6-19/05/30 009-01-45	No.1~ No.45

1. Tensile strength & Elongation Test

Samples: According to the standard GB/T 528, Sample Numbers No.1~No.5.

Test results of tensile strength & Elongation see the Table 1.

Table 1. Test results of tensile strength & Elongation

No.	Size (Width*Thick) mm	Destructive force N	Tensile strength MPa	Average tensile strength MPa	Elongation %	Average elongation %
1	6.00*2.24	112.22	8.35	8.41	494.05	492.92
2	6.00*2.28	119.56	8.74		490.78	
3	6.00*2.23	116.14	8.68		481.08	
4	6.00*2.21	109.93	8.29		515.48	
5	6.00*2.19	105.25	8.01		485.19	
Standard value		Tensile strength> 4MPa, Elongation >150%				
Test results		Pass				

2. Tear strength Test

Samples: According to the standard GB/T 529, Sample Numbers No.6~No.10.

Test results of tear strength see the Table 2.

Table 2. Test results of tear strength

No.	Average thickness mm	Tear tension N	Tear strength kN/m	Average tear strength kN/m
6	2.12	30.68	14.47	16.68
7	2.45	37.46	15.29	
8	2.13	35.53	16.68	
9	2.02	34.63	17.14	
10	2.12	32.04	15.11	
Standard value	Tear strength> 10kN/m			
Test results	Pass			

3. Shore A hardness Test

Samples: The thickness is about 6mm, Sample Numbers No.11~No.15.

Test results of Shore see the Table 3.1 and 3.2.

Table 3.1. The test results of Shore A before boiling water test

No.	1st Time	2nd Time	3rd Time	4th Time	5th Time	Average value
11	75	75	75	76	75	75
12	75	75	75	75	75	75
13	74	74	74	75	75	74
14	75	74	75	74	75	75
15	76	75	75	75	76	75
Standard value		>50				
Test results		Pass				

Table 3.2. The test results of Shore A after boiling water test

No.	1st Time	2nd Time	3rd Time	4th Time	5th Time	Average value
11	75	75	75	76	75	75
12	75	75	75	75	75	75
13	74	74	74	75	75	74
14	75	74	75	74	75	75
15	76	75	75	75	76	75
Standard value		>50. Before and after boiling, harden should not exceed 10%.				
Test results		Pass				

4. Combustibility Test

Samples: the size should be (125±5) mm*(13.0±0.3) mm*(3.0±0.2) mm, Sample Numbers No.16~No.20.

Sample method and test device: Vertical combustion method is used in combustibility test. According to the test standard, after 10 seconds of flame application, the flame is moved beyond 150 mm, and the flame burning time tai1 is recorded. When the flame of flame burning is extinguished, the flame is applied again immediately. After 10 seconds, the flame is removed automatically. The flame burning time tai2 and the flameless burning time tbi2 of the sample are recorded. Each group of samples repeats the above tests. Check procedure. The test device meets the requirements of relevant standards and the test gas is industrial methane.

Test results of combustibility test see the Table 4, the level should be FV-0.

Table 4. The test results of combustibility test.

No.	16	17	18	19	20	FV-0
Flaming combustion time of a single sample after each application of flame tai 1&tai 2, s	0.2<ta<1.8					
Each group of 5 samples has 10 times of flame burning time.ta, s	9.9					
The sum of the second flameless combustion time and the flameless combustion time of single sample tci 1, s	2.0~5.7					
Is there a sample clip burned or not?	Non	Non	Non	Non	Non	Non
Does the dripping fuel ignite the defatted cotton?	Non	Non	Non	Non	Non	Non
melt flow and drip ignition	Non	Non	Non	Non	Non	/
Test results	FV-0 Level. Pass					

5. Hydrophobicity Test

Sample: 5 pcs samples, sample numbers No.21~No.25.

The size of sample: 120mm*60mm*2mm.

Test device: Contact angle tester and eye-measurement.

5.1 Initial hydrophobicity test.

The hydrophobicity of samples was measured by static contact angle method and spray water test (HC test) respectively. The test results see the Table 5.1

Table 5.1. Test results of initial hydrophobicity test.

No.	Static contact angle °						HC value
	Water drop 1	Water drop 2	Water drop 3	Water drop 4	Water drop 5	Average value	
21	99.7	103.0	108.2	102.5	107.3	104.1	HC 1
22	101.6	106.9	106.3	105.3	104.1		HC 1
23	104.3	107.5	99.3	103.7	101.7		HC 1
24	/	/	/	/	/	/	HC 1
25	/	/	/	/	/	/	HC 2
Standard value	The average value of Static contact angle>100°, HC1~HC2, and HC3 no more than one.						
Test results	Pass						

5.2 Attenuation characteristics of hydrophobicity test

Soak the clean sample in a beaker with water for 96 hours. After 96 hours, the surface water was sucked out with filter paper. The static contact angle and HC value of three samples were measured immediately. The remaining two samples only measured HC value. The test results see Table 5.2.

Table 5.2. Test results of Attenuation characteristics of hydrophobicity

No.	Static contact angle °						HC value
	Water drop 1	Water drop 2	Water drop 3	Water drop 4	Water drop 5	Average value	
21	97.4	96.2	100.3	100.9	94.8	98.8	HC 2
22	100.8	101.3	95.5	100.5	97.5		HC 3
23	100.7	98.8	101.3	95.7	100.6		HC 2
24	/	/	/	/	/	/	HC 2
25	/	/	/	/	/	/	HC 2
Standard value	The average value of Static contact angle>90°, HC2~HC3, and HC4 no more than one.						
Test results	Pass						

5.3 Restoration characteristics of hydrophobicity test

The samples after the hydrophobicity loss test will be placed in the laboratory environment for 24 hours. The static contact angle and HC value of three samples will be measured, while only HC value of the other two samples will be tested. The test results see Table 5.3.

Table 5.3. Test results of Restoration characteristics of hydrophobicity

No.	Static contact angle °						HC value
	Water drop 1	Water drop 2	Water drop 3	Water drop 4	Water drop 5	Average value	
21	99.4	103.2	101.3	101.9	103.8	101.95	HC 1
22	100.8	101.3	102.5	100.5	103.5		HC 1
23	100.7	103.8	103.3	102.7	100.6		HC 1
24	/	/	/	/	/	/	HC 2
25	/	/	/	/	/	/	HC 1
Restoration time	24 h						
Standard value	The average value of Static contact angle>100°, HC1~HC2, and HC3 no more than one.						
Test results	Pass						

5.4 Migration characteristics of hydrophobicity

Five samples were contaminated with ESDD 0.1 mg/cm3 and NSDD 0.5 mg/cm. The static contact angles and HC values of three samples were measured after 96 hours of static storage. The remaining two samples were only measured for HC values. The test results see Table 5.4.

Table 5.4. Test results of Migration characteristics of hydrophobicity

No.	Static contact angle °						HC value
	Water drop 1	Water drop 2	Water drop 3	Water drop 4	Water drop 5	Average value	
21	111.3	114.4	108.7	118.4	115.21	116.45	HC 1
22	119.7	118.4	117.4	126.2	117.2		HC 1
23	119.3	110.3	115.8	112.5	121.9		HC 1
24	/	/	/	/	/	/	HC 1
25	/	/	/	/	/	/	HC 1
Standard value	The average value of Static contact angle>110°, HC2~HC3, and HC4~HC5 no more than one.						
Test results	Pass						

6. Volume resistivity Test

Samples: 5 pcs, Sample Numbers: No.31~No.35; Size of samples: 100mm*100mm, thickness is about 2mm.

Test temperature: 20.4℃, relative humidity: 30%, test results see Table 6.

Table 6. Test results of volume resistivity test

No.	31	32	33	34	35	Average value
Thickness	2.08	2.01	2.09	2.06	2.04	2.09
Volume resistivity	$2.31*10^{13}$	$2.59*10^{13}$	$2.43*10^{13}$	$2.51*10^{13}$	$2.55*10^{13}$	$2.48*10^{13}$
Standard value	volume resistivity > $1.0*10^{12}$ Ω m					
Test results	Pass					

7. Breakdown strength Test

The thickness of samples is 1mm. Sample Numbers: No. 36~No.40.

The results of Breakdown strength test see Table 7.

Table 7. Test results of Breakdown strength test

No.	Thickness mm	Breakdown Voltage kV	Breakdown strength kV /mm	Average Value kV/mm
36	1.18	36	30.51	30.24
37	1.15	36.6	31.83	
38	1.11	32.2	29.00	
39	1.20	36.2	30.17	
40	1.20	35.6	29.67	
Standard value	Breakdown strength> 20kV/mm			
Test results	Pass			

8. Tracking resistance & electrical erosion Test

a. Samples: 5 pcs, the size of sample is L 130mm* W 50mm* T 6mm.

b. Make the samples and installation

According to the GB/T6553 standard, the pressing and installation of the test sample. Sample Numbers: No.41~No.45.

c. Test method and standard value.

According to GB/T6553 standard, the withstand voltage is 4.5 kV. The electrical erosion depth should not exceed 2.5 mm.

d. Test result

See Table 8.

Table 8. Test results of tracking resistance & electrical erosion

No.	Standard value	No.41	No.42	No.43	No.44	No.45
Test Voltage kV	4.5 (AC)					
Sewage flow rate mL/min	0.6					
Test time h	6					
Filtering device	Non	Non	Non	Non	Non	Non
Electrical erosion mm	<2.5	0.2	0.5	0.8	0.5	0.4
Test results	TMA 4.5 Pass.					
Standard value	No less TMA 4.5					

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Relatório de Ensaio de Recebimento em Fábrica

福建瑞森新材料股份有限公司

产品名称 Product Nmae	Booster Shed	产品型号 Model	195*450	批号 Batch No.	RS191227

外观测试数据记录表 Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	450	±10 mm	453	Pass	
外径 2 Exteral Dia	450	±10 mm	453	Pass	
外径 3 Exteral Dia	450	±10 mm	454	Pass	
内径 1 Inneral Dia	195	±10 mm	195	Pass	
内径 2 Inneral Dia	195	±10 mm	194	Pass	
内径 3 Inneral Dia	195	±10 mm	194	Pass	
厚度 1 Thickness of Booster Shed	4 mm	±1 mm	4.51	Pass	
厚度 2 Thickness of Booster Shed	4 mm	±1 mm	4.47	Pass	
厚度 3 Thickness of Booster Shed	4 mm	±1 mm	4.42	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	56	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	57	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	57	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.6	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	5	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.1	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	3.9	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	4.3	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	4.2	Pass	
孔距 1 Distance of Hole	30 mm	±5 mm	29	Pass	
孔距 2 Distance of Hole	30 mm	±5 mm	30	Pass	
孔距 3 Distance of Hole	30 mm	±5 mm	29	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	9 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	0 av	HC 值 HC Value	备注 Note
195*450	109.4	108.2	120.6	117.1	112.5	113.56	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付燏		日期 Date	9 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	1.8*1013	81.6	1.47*1015	3.89*1015
2	1.6*1013	81.6	1.30*1015	
3	1.1*1014	81.6	8.9*1015	
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	9 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	59	60	
2	60		
3	61		
4	60		
5	60		
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	9 Jan, 2020

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可燃性试验原始数据记录表
Flammability

试样燃烧行为 Combustion Behavior of Sample	Class FV-0级标准规定值 FV-0 standard value	Test Value				
		1	2	3	4	5
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	1s	1s	1s	1s	1s
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	10s				
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	2s	2s	2s	2s	2s
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non
检测结果 Test Result: PASS	检验人 Inspector	付煽		日期 Date	9 Jan, 2020	

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福建瑞森新材料股份有限公司

产品名称 Product Nmae	Booster Shed	产品型号 Model	220*560	批号 Batch No.	RS200102

外观测试数据记录表 Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	560	±10 mm	565	Pass	
外径 2 Exteral Dia	560	±10 mm	562	Pass	
外径 3 Exteral Dia	560	±10 mm	565	Pass	
内径 1 Inneral Dia	220	±10 mm	222	Pass	
内径 2 Inneral Dia	220	±10 mm	223	Pass	
内径 3 Inneral Dia	220	±10 mm	223	Pass	
厚度 1 Thickness of Booster Shed	5 mm	±1 mm	4.5	Pass	
厚度 2 Thickness of Booster Shed	5 mm	±1 mm	4.4	Pass	
厚度 3 Thickness of Booster Shed	5 mm	±1 mm	4.4	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	55.6	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	55.2	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	55.6	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.3	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.5	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.2	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	4	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	4.1	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	4.1	Pass	
孔距 1 Distance of Hole	30 mm	±5 mm	34	Pass	
孔距 2 Distance of Hole	30 mm	±5 mm	33.8	Pass	
孔距 3 Distance of Hole	30 mm	±5 mm	33.8	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	10 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	0 av	HC 值 HC Value	备注 Note
220*560	110.4	117.4	114.3	111.6	108	112.3	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付炀		日期 Date	10 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	1.2*1012	81.6	9.8*1014	6.94*1014
2	1.2*1013	81.6	9.8*1014	
3	1.5*1013	81.6	1.22*1014	
检测结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	10 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	63	64.2	
2	65		
3	64		
4	64		
5	64		
检测结果 Test Result	PASS	检验人 Inspector 付炀	日期 Date 10 Jan, 2020

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可燃性试验原始数据记录表
Flammability

试样燃烧行为 Combustion Behavior of Sample	Class						
	FV-0级标准规定值 FV-0 standard value	Test Value					
		1	2	3	4	5	
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s	
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	1s	1s	1s	6s	1s	
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	15s					
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	2s	2s	2s	7s	2s	
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non	
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non	
检测结果 Test Result	PASS	检验人 Inspector	付橘		日期 Date	10 Jan, 2020	



福建瑞森新材料股份有限公司

产品名称 Product Nmae	Booster Shed	产品型号 Model	260*490	批号 Batch No.	RS191231

外观测试数据记录表
Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	490	±10 mm	492	Pass	
外径 2 Exteral Dia	490	±10 mm	489	Pass	
外径 3 Exteral Dia	490	±10 mm	490	Pass	
内径 1 Inneral Dia	260	±10 mm	262	Pass	
内径 2 Inneral Dia	260	±10 mm	262	Pass	
内径 3 Inneral Dia	260	±10 mm	263	Pass	
厚度 1 Thickness of Booster Shed	5 mm	±1 mm	4.5	Pass	
厚度 2 Thickness of Booster Shed	5 mm	±1 mm	4.6	Pass	
厚度 3 Thickness of Booster Shed	5 mm	±1 mm	4.1	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	56.5	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	56.8	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	56.9	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.5	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.9	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.9	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	4.6	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	4	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	3.9	Pass	
孔距 1 Distance of Hole	30 mm	±5 mm	28.2	Pass	
孔距 2 Distance of Hole	30 mm	±5 mm	28.7	Pass	
孔距 3 Distance of Hole	30 mm	±5 mm	30	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	9 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	θ av	HC 值 HC Value	备注 Note
260*490	112	106.3	106.5	103.5	108.2	107.3	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付燏		日期 Date	9 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	7*1012	81.6	5.71*1014	
2	6*1012	81.6	4.89*1014	
3	5.5*1012	81.6	4.49*1014	
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	9 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	63	63.4	
2	64		
3	63		
4	64		
5	63		
检测结果 Test Result	PASS	检验人 Inspector: 付燏	日期 Date: 9 Jan, 2020

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可燃性试验原始数据记录表
Flammability

试样燃烧行为 Combustion Behavior of Sample	Class						
	FV-0级标准规定值 FV-0 standard value	Test Value					
		1	2	3	4	5	
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s	
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	1s	4s	1s	1s	1s	
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	13s					
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	2s	5s	2s	2s	2s	
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non	
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non	
检测结果 Test Result	PASS	检验人 Inspector	付燚	日期 Date	9 Jan, 2020		

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福建瑞森新材料股份有限公司

产品名称 Product Nmae	Booster Shed	产品型号 Model	330*580	批号 Batch No.	RS200103

外观测试数据记录表
Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	580	±10 mm	582	Pass	
外径 2 Exteral Dia	580	±10 mm	581	Pass	
外径 3 Exteral Dia	580	±10 mm	582	Pass	
内径 1 Inneral Dia	330	±10 mm	334	Pass	
内径 2 Inneral Dia	330	±10 mm	333	Pass	
内径 3 Inneral Dia	330	±10 mm	333	Pass	
厚度 1 Thickness of Booster Shed	4 mm	±1 mm	4.6	Pass	
厚度 2 Thickness of Booster Shed	4 mm	±1 mm	4.9	Pass	
厚度 3 Thickness of Booster Shed	6 mm	±1 mm	6.2	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	56.2	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	55.8	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	56.5	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.9	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.9	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.4	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	3.9	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	3.9	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	4.2	Pass	
孔距 1 Distance of Hole	30 mm	±5 mm	32.6	Pass	
孔距 2 Distance of Hole	30 mm	±5 mm	33.5	Pass	
孔距 3 Distance of Hole	30 mm	±5 mm	34.7	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	9 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	0 av	HC 值 HC Value	备注 Note
330*580	104	104.5	108.8	114.4	114.8	109.3	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付炀		日期 Date	9 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	7*1013	81.6	5.71*1015	
2	2.3*1014	81.6	1.87*1016	
3	3.6*1014	81.6	2.93*1016	
检测结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	9 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	61	63.9	
2	64		
3	65		
4	66		
5	64		
检测结果 Test Result	PASS	检验人 Inspector 付炀	日期 Date 9 Jan, 2020

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可燃性试验原始数据记录表
Flammability

试样燃烧行为 Combustion Behavior of Sample	Class						
	FV-0级标准规定值 FV-0 standard value	Test Value					
		1	2	3	4	5	
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s	
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	1s	1s	1s	1s	2s	
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	12s					
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	2s	2s	2s	2s	4s	
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non	
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non	
检测结果 Test Result	PASS	检验人 Inspector	付炀		日期 Date	9 Jan, 2020	

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产品名称 Product Nmae	Booster Shed	产品型号 Model	110*350	批号 Batch No.	RS191216

外观测试数据记录表
Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	350	±10 mm	352	Pass	
外径 2 Exteral Dia	350	±10 mm	352	Pass	
外径 3 Exteral Dia	350	±10 mm	352	Pass	
内径 1 Inneral Dia	110	±10 mm	112	Pass	
内径 2 Inneral Dia	110	±10 mm	113	Pass	
内径 3 Inneral Dia	110	±10 mm	113	Pass	
厚度 1 Thickness of Booster Shed	4 mm	±1 mm	4.2	Pass	
厚度 2 Thickness of Booster Shed	4 mm	±1 mm	4.2	Pass	
厚度 3 Thickness of Booster Shed	4 mm	±1 mm	4.1	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	55	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	56	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	55.7	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.1	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.7	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.8	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	4	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	3.8	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	4	Pass	
孔距 1 Distance of Hole	30 mm	±5 mm	28.7	Pass	
孔距 2 Distance of Hole	30 mm	±5 mm	29.5	Pass	
孔距 3 Distance of Hole	30 mm	±5 mm	28.2	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	10 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	0 av	HC 值 HC Value	备注 Note
110*350	107.6	103.8	111.9	120.5	120.1	112.78	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付炀		日期 Date	10 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	8*1013	81.6	6.5*1015	2.3*1016
2	7*1014	81.6	5.7*1016	
3	8*1013	81.6	6.5*1015	
检测结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	10 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	62	60.6	
2	60		
3	61		
4	60		
5	60		
检测结果 Test Result	PASS	检验人 Inspector 付炀	日期 Date 10 Jan, 2020

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可燃性试验原始数据记录表
Flammability

试样燃烧行为 Combustion Behavior of Sample	Class						
	FV-0级标准规定值 FV-0 standard value	Test Value					
		1	2	3	4	5	
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s	
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	1s	1s	1s	5s	1s	
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	14s					
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	2s	2s	2s	6s	2s	
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non	
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non	
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	10 Jan, 2020		

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福建瑞森新材料股份有限公司

产品名称 Product Nmae	Booster Shed	产品型号 Model	110*470	批号 Batch No.	RS191230

外观测试数据记录表
Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	470	±10 mm	478	Pass	
外径 2 Exteral Dia	470	±10 mm	475	Pass	
外径 3 Exteral Dia	470	±10 mm	478	Pass	
内径 1 Inneral Dia	110	±10 mm	106	Pass	
内径 2 Inneral Dia	110	±10 mm	109	Pass	
内径 3 Inneral Dia	110	±10 mm	109	Pass	
厚度 1 Thickness of Booster Shed	4 mm	±1 mm	4.8	Pass	
厚度 2 Thickness of Booster Shed	4 mm	±1 mm	4.9	Pass	
厚度 3 Thickness of Booster Shed	4 mm	±1 mm	4.8	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	57.1	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	56.8	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	57.2	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.6	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.9	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	5	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	4.5	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	4.7	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	4.4	Pass	
孔距 1 Distance of Hole	30 mm	±5 mm	26	Pass	
孔距 2 Distance of Hole	30 mm	±5 mm	28	Pass	
孔距 3 Distance of Hole	30 mm	±5 mm	26	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	9 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	0 av	HC 值 HC Value	备注 Note
110*470	112.6	106.9	112	117.1	118.1	113.3	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付炀		日期 Date	9 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	1.2*1013	81.6	9.79*1014	2.25*1015
2	1.1*1013	81.6	8.97*1014	
3	6*1013	81.6	4.89*1015	
检测结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	9 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	64	64.2	
2	64		
3	64		
4	65		
5	64		
检测结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	9 Jan, 2020

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可燃性试验原始数据记录表 Flammability							
试样燃烧行为 Combustion Behavior of Sample	Class						
	FV-0级标准规定值 FV-0 standard value	Test Value					
		1	2	3	4	5	
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s	
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	1s	5s	1s	1s	2s	
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	15s					
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	2s	6s	2s	2s	3s	
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non	
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non	
检测结果 Test Result	PASS	检验人 Inspector	付焰	日期 Date	9 Jan, 2020		

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福建瑞森新材料股份有限公司

产品名称 Product Nmae	Booster Shed	产品型号 Model	130*410	批号 Batch No.	RS191216

外观测试数据记录表
Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	410	±10 mm	410	Pass	
外径 2 Exteral Dia	410	±10 mm	410	Pass	
外径 3 Exteral Dia	410	±10 mm	412	Pass	
内径 1 Inneral Dia	130	±10 mm	130	Pass	
内径 2 Inneral Dia	130	±10 mm	130	Pass	
内径 3 Inneral Dia	130	±10 mm	131	Pass	
厚度 1 Thickness of Booster Shed	4 mm	±1 mm	4.2	Pass	
厚度 2 Thickness of Booster Shed	4 mm	±1 mm	4.2	Pass	
厚度 3 Thickness of Booster Shed	4 mm	±1 mm	4.2	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	57	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	56.5	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	55.6	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.6	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.7	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.9	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	3.7	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	4.3	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	4.1	Pass	
孔距 1 Distance of Hole	30 mm	±5 mm	27.8	Pass	
孔距 2 Distance of Hole	30 mm	±5 mm	27.9	Pass	
孔距 3 Distance of Hole	30 mm	±5 mm	28.6	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	10 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	0 av	HC 值 HC Value	备注 Note
130*410	109	105.2	106.5	110.4	118.8	109.98	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付燏		日期 Date	10 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	2.5*1014	81.6	2.04*1016	
2	1.2*1013	81.6	9.8*1015	
3	2.0*1014	81.6	1.6*1016	
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	10 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	61	62.5	
2	62		
3	63		
4	64		
5	63		
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	10 Jan, 2020

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可燃性试验原始数据记录表
Flammability

试样燃烧行为 Combustion Behavior of Sample	Class						
	FV-0级标准规定值 FV-0 standard value	Test Value					
		1	2	3	4	5	
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s	
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	1s	1s	1s	1s	1s	
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	10s					
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	3s	2s	2s	3s	2s	
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non	
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non	
检测结果 Test Result	PASS	检验人 Inspector	付炀		日期 Date	10 Jan, 2020	



福建瑞森新材料股份有限公司

产品名称 Product Nmae	Booster Shed	产品型号 Model	160*450	批号 Batch No.	RS191123

外观测试数据记录表
Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	450	±10 mm	455	Pass	
外径 2 Exteral Dia	450	±10 mm	454	Pass	
外径 3 Exteral Dia	450	±10 mm	450	Pass	
内径 1 Inneral Dia	160	±10 mm	160	Pass	
内径 2 Inneral Dia	160	±10 mm	160	Pass	
内径 3 Inneral Dia	160	±10 mm	160	Pass	
厚度 1 Thickness of Booster Shed	4 mm	±1 mm	4.7	Pass	
厚度 2 Thickness of Booster Shed	4 mm	±1 mm	4.6	Pass	
厚度 3 Thickness of Booster Shed	4 mm	±1 mm	4.6	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	56.5	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	56.2	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	56.3	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.3	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.3	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	5.3	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	3.9	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	4.2	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	4.2	Pass	
孔距 1 Distance of Hole	30 mm	±5 mm	33.5	Pass	
孔距 2 Distance of Hole	30 mm	±5 mm	33.6	Pass	
孔距 3 Distance of Hole	30 mm	±5 mm	34.1	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	10 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	0 av	HC 值 HC Value	备注 Note
160*450	109.4	108.7	112.3	110.7	105.7	109.36	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付燏		日期 Date	10 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	8*1014	81.6	6.52*1016	3.26*1016
2	1.5*1014	81.6	1.22*1016	
3	2.5*1014	81.6	2.04*2026	
检测结果 Test Result	PASS	检验人 Inspector		日期 Date	10 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	60	58.2	
2	60		
3	58		
4	57		
5	56		
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	10 Jan, 2020

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可燃性试验原始数据记录表
Flammability

试样燃烧行为 Combustion Behavior of Sample	Class						
	FV-0级标准规定值 FV-0 standard value	Test Value					
		1	2	3	4	5	
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s	
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	2s	1s	1s	6s	1s	
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	16s					
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	3s	2s	2s	7s	1s	
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non	
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non	
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	10 Jan, 2020		

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产品名称 Product Nmae	Booster Shed	产品型号 Model	190*410	批号 Batch No.	RS191221

外观测试数据记录表 Appearance Inspection / Dimensions

位置 Position	要求尺寸 Measurement	公差 Tolerance	实测尺寸 Test Value	检测结果 Test Result	备注 Noted
外径 1 Exteral Dia	410	±10 mm	413	Pass	
外径 2 Exteral Dia	410	±10 mm	413	Pass	
外径 3 Exteral Dia	410	±10 mm	413	Pass	
内径 1 Inneral Dia	190	±10 mm	193	Pass	
内径 2 Inneral Dia	190	±10 mm	193	Pass	
内径 3 Inneral Dia	190	±10 mm	192	Pass	
厚度 1 Thickness of Booster Shed	4 mm	±1 mm	4.25	Pass	
厚度 2 Thickness of Booster Shed	4 mm	±1 mm	4.21	Pass	
厚度 3 Thickness of Booster Shed	4 mm	±1 mm	4.22	Pass	
拉筋长 1 Length of Reinforcing Ribs	60 mm	±5 mm	56	Pass	
拉筋长 2 Length of Reinforcing Ribs	60 mm	±5 mm	55.4	Pass	
拉筋长 3 Length of Reinforcing Ribs	60 mm	±5 mm	56	Pass	
拉筋厚 1 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.8	Pass	
拉筋厚 2 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.7	Pass	
拉筋厚 3 Thickness of Reinforcing Ribs	5 mm	±1 mm	4.6	Pass	
边缘厚 1 Thickness of Edge	4 mm	±1 mm	4.4	Pass	

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边缘厚 2 Thickness of Edge	4 mm	±1 mm	4.1	Pass	
边缘厚 3 Thickness of Edge	4 mm	±1 mm	4	Pass	
孔距 1 Distance of Hole	20 mm	±5 mm	19	Pass	
孔距 2 Distance of Hole	20 mm	±5 mm	15.6	Pass	
孔距 3 Distance of Hole	20 mm	±5 mm	15.5	Pass	
安装测试 Botton Test	Attach		Good	Pass	
检验结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	9 Jan, 2020

憎水性试验数据记录表
Hidrofobicity Nature

样品编号 Sample No.	水珠 1 Water Drop	水珠 2 Water Drop	水珠 3 Water Drop	水珠 4 Water Drop	水珠 5 Water Drop	θ av	HC 值 HC Value	备注 Note
190*410	105.6	106.2	110.5	111.8	101.4	107.1	HC 1	
检测结果 Test Result	PASS		检验人 Inspector	付燏		日期 Date	9 Jan, 2020	

表面电阻率试验数据记录表
Surface Resistivity

试样编号 Sample No.	表面电阻Surface Resistance	系数 2π/ln (D2/D1) Ratio	表面电阻率 Surface Resistivity	平均值 Average Value
1	4*1013	81.6	3.26*1015	3.64*1016
2	8*1014	81.6	6.52*1016	
3	5*1014	81.6	4.08*1016	
检测结果 Test Result	PASS	检验人 Inspector	付燏	日期 Date	9 Jan, 2020

邵氏硬度试验数据记录表
Shore Hardness

样品编号 Sample No.	测试值 Test Value	平均值 Average Value	备注 Note
1	59	58.2	
2	59		
3	58		
4	58		
5	57		
检测结果 Test Result	PASS	检验人 Inspector 付燏	日期 Date 9 Jan, 2020

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可燃性试验原始数据记录表
Flammability

试样燃烧行为 Combustion Behavior of Sample	Class						
	FV-0级标准规定值 FV-0 standard value	Test Value				
		1	2	3	4	5
单个试样第一次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the first application of flame	≤10s	1s	1s	1s	1s	1s
单个试样第二次施加火焰后的有焰燃烧时间（t）.s Flame burning time of single sample after the second application of flame	≤10s	1s	1s	1s	1s	1s
每组5个试样施加10次火焰后总的有焰燃烧时间(t).s Total flaming time of each group of 5 samples after applying 10 flames	≤50s	10s				
单个试样第二次有焰燃烧时间与无焰燃烧时间之和（t）.s Sum of the second flame burning time and flameless burning time of a single sample	≤30s	2s	2s	2s	2s	2s
有焰或无焰燃烧蔓延到夹具的现象 Phenomenon of flame or flameless combustion spreading to fixture	Non	Non	Non	Non	Non	Non
滴落物引烯脱脂棉的现象 The phenomenon of dropping matter leading to olefin absorbent cotton	Non	Non	Non	Non	Non	Non
检测结果 Test Result: PASS	检验人 Inspector	付煽		日期 Date	9 Jan, 2020		



福建瑞森新材料股份有限公司

产品名称 Product Nmae	Glue	产品型号 Model		批号 Batch No.	RS200106

固化时间试验数据表 Curing Time					
样品编号 Sample No.	固化时间 Curing Time				平均 Average Value
1	14s				14s
2	15s				
3	14s				
检测结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	9 Jan, 2020

附着力试验数据表 Adhesion					
样品编号 Sample No.	附着力 Class				Average Class
1	1				1
2	1				
检测结果 Test Result	PASS	检验人 Inspector	付炀	日期 Date	9 Jan, 2020

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