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B	REVIEWED WHERE INDICATED DUE TO CONSISTENCY ANALYSIS								
C	REVIEWED WHERE INDICATED DUE TO APIR (PBAC)								
D	REVIEWEED WHERE INDICATED TO COMPLY WITH BRAZILIAN RULES ABNT-NBR.								
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F	REVISED ITEM 4.10 DUE TO APIR (PACXe). REVISED WHERE INDICATED ACCORDING TO GASEOUS FIXED FIREFIGHTING SYSTEM CHANGES								
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EXECUTION	ADINAN	ADINAN	YMYC	YMYC	CWEQ	CWEQ	USX6		
CHECK	DANIELA	DANIELA	B79G	CWEQ	Q071	Q071	B79G		
APPROVAL	B.FERREIRA	B.FERREIRA	UP6E	UP6E	EK9U	EK9U	EK9U		
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INTERNAL

ESUP

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1. INTRODUCTION


- 1.1. This specification defines guidelines and minimum requirements for supplying of the Warning Signs to be installed in an Offshore Unit.
- 1.2. This document shall be included as an integrant part of the Purchase Order.
- 1.3. The definition of the appropriate safety signaling to be considered for each area of the FPSO shall be done during detailing design.
- 1.4. The safety and general signaling requirements stated on NORMAM 01 (as per item 2.5 below) shall be followed, in particular chapter 9, section VI, item 930.

2. REGULATIONS, CODES AND STANDARDS

Regulations to be followed in the design, manufacture and installation of the Warning Signs are stated below. SUPPLIER shall produce evidence of having complied with all regulations, always in their latest editions, as well as with the requirements defined in this specification. In case of any disagreement, it shall be submitted to PETROBRAS for approval.

- 2.1. IMO RESOLUTION A.952(23) adopted on 5 December 2003 (Agenda item 17): Graphical Symbols for Shipboard Fire Control Plans.
- 2.2. IMO RESOLUTION A.760(18) adopted on 4 November 1993: Symbols Related to Life-Saving Appliances and Arrangements.
- 2.3. IMO-SOLAS: International Convention for the Safety of Life at Sea, 1974/1988 (Consolidated text with amendments that took effect internationally until July 1, 2014).
- 2.4. DIN 67510-1 (Phosphorescent pigments and products - Part 1: Measurement and marking at the producer - Active May 2020);
- 2.5. DIN 67510-2 (Photoluminescent pigments and products - Part 2: Measurement of phosphorescent products on site - Active October 2002);

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<p>2.6. DIN 67510-3 (Photoluminescent pigments and products - Part 3: Low location lighting system - Active APRIL 2011).</p> <p>2.7. NORMAM 01: <i>Normas da Autoridade Marítima para Embarcações Empregadas na Navegação em Mar Aberto - Ministério da Marinha – DPC</i> (Meaning: Brazilian Maritime Authority Standard for Offshore Navigation), Revised Version With All Modifications Up to April/20/2020 (<i>Portaria Nº 102/Dpc, 7 De Abril De 2020</i>).</p> <p>2.8. ABNT NBR 16820 - <i>Sistemas de sinalização de emergência — Projeto, requisitos e métodos de ensaio</i> (Meaning: Safety signs systems — Design, requirements, and test methods).</p> <p>2.9. ABNT-NBR 7195: Cores para Segurança - Safety Color.</p> <p>2.10. NR's - "<i>Normas Regulamentadoras do Ministério do Trabalho e Previdência</i>" (Regulatory Standards of the <i>Ministry of Labor and Social Security</i>).</p> <p>2.11. ISO 7010 - Graphical symbols — Safety colors and safety signs — Registered safety - Third edition (Published Date: July 2019).</p> <p>3. DESCRIPTION</p> <p>3.1. Warning Signs shall be used to avoid accidents, indicate escape routes, and locate fire-fighting equipment and embarkation stations.</p> <p>3.2. The production unit with foreign workers on board shall have occupational health and safety signs also written in English.</p> <p>4. CONSTRUCTION DETAILS</p> <p>4.1. The Warning Signs shall be made in PVC, light, semi-rigid endowed with great flexibility and resistance. All the letters shall be in alphabet stick capital letter. The thickness of the plate shall be of 3 mm to external and 2 mm for inside areas.</p> <p>4.2. The supports of the Warning Signs shall be of frame type, provided in profile of aluminum for marine environmental with reinforcement in the posterior part that</p>			

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<p>provides larger resistance and protection to the group. They shall allow the replacement of the Warning Signs without damage and shall not allow the Warning Signs to be easily removed. They shall be supplied with fixation devices that allow the fixation on walls or handrails of tubular structure.</p> <p>4.3. The stickers in vinyl can be used with advantages in certain cases instead of PVC plates.</p> <p>4.4. The stickers shall be resistant to friction, bad weather, UV rays, oils, alkalis, weak acids, common solvents and be suitable for locations where temperature can vary between -10 °C and 80 °C. All the letters shall be in alphabet stick in capital letter.</p> <p>4.5. The plates and stickers signs shall be installed in appropriate places that allow a good visualization. Installation of safety signs in mobile objects shall be avoided.</p> <p>4.6. The plates and stickers size shall be determined by the message and letters size, and it is based on the reading distance. The smallest dimension of a plate shall be 8 cm.</p> <p>4.7. The layout of the legends and symbols shall be well distributed.</p> <p>4.8. The internal means of escape, including stairways and exits, shall be marked by photoluminescence strip indicators placed on steps, handrails and not more than 0.3 m above the deck at all points of the escape route including angles and intersection. The marking must enable passengers to identify all the routes of escape and readily identify the escape exits. Additionally, all signs and fire equipment location markings in the escape routes shall be of photoluminescence material.</p> <p>4.9. The manufacturer shall present a conformity certificate with standard DIN 67510 emitted by a recognized laboratory.</p> <p>4.10. The colors and shapes of the plates as well as the ratio between the heights of the letters and the reading distance shall be according to the attachments of this document and items 2.8 and 2.9.</p>			

5. SCOPE OF SUPPLY

5.1. The manufacturer shall supply plates and stickers as described bellow:

5.2. The amount, type and location of plates and adhesives shall be defined according to arrangement and in agreement with PETROBRAS. The warning signboard and labels layout shall be generated for each platform deck.

5.3. DANGER SERIES

5.3.1. It guides the worker about unsafe conditions that can offer an immediate risk to health and life.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	NÃO FUME, NÃO USE CHAMA EXPOSTA	24 x 34	In the access routes from accommodation to the process area.	
Plate	ALTA PRESSÃO (illustrate)	24 x 34		
Plate	SUPERFÍCIE AQUECIDA	24 x 34		
Plate	ALTA TENSÃO	24 x 34		
Plate	INFLAMÁVEL	24 x 34		
Plate	NÃO OPERE ESTE EQUIPAMENTO (illustrate)	24 x 34		
Plate	PERIGO GÁS SULFÍDRICO – H ₂ S	24 x 34		
Plate	PERIGO GÁS CARBÔNICO – CO ₂	24 x 34		
Plate	MOVIMENTAÇÃO DE CARGA ACIMA	24 x 34	In the laydown areas.	
Plate	NÃO ABRA ESTA VÁLVULA (illustrate)	24 x 34		
Plate	NÃO FECHE ESTA VÁLVULA	24 x 34		
Plate	LÍQUIDO CORROSIVO. USE EQUIPAMENTO DE PROTEÇÃO	24 x 34		
Plate	PRODUTOS QUÍMICOS (illustrate)	24 x 34	In the chemical unit and products storage area.	
Plate	220 VOLTS	24 x 34		
Plate	440 VOLTS (illustrate)	24 x 34		


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Plate	480 VOLTS (illustrate)	24 x 34		
Plate	VASO EM MANUTENÇÃO. NÃO ABRIR A VÁLVULA	24 x 34		
Plate	ESPAÇO CONFINADO	24 x 34	In the access to the confined spaces.	
Plate	PERIGO – EQUIPAMENTO EM MOVIMENTO	24 x 34		
Adhesive	ALTA TENSÃO	24 x 34		
Adhesive	INFLAMÁVEL	24 x 34		
Adhesive	NÃO FUME (illustrate)	24 x 34	In the access routes from accommodation to the process area.	
Adhesive	NÃO FUME, NÃO USE CHAMA EXPOSTA	24 x 34	In the access routes from accommodation to the process area.	
Adhesive	220 VOLTS	24 x 34		
Adhesive	ESTA SALA É PROTEGIDA POR IG-541. ENTRADA PROIBIDA SE O ALARME DE IG-541 ESTIVER ATIVO	24 x 34	In the external accesses to the rooms protected by IG-541.	
Adhesive	ESTA SALA É PROTEGIDA POR FK-5-1-12. ENTRADA PROIBIDA SE O ALARME DE FK-5-1-12 ESTIVER ATIVO	24 x 34	In the external accesses to the rooms protected by FK-5-1-12.	
Adhesive	440 VOLTS (illustrate)	24 x 34		
Adhesive	480 VOLTS (illustrate)	24 x 34		

Note: See Attachment A

5.4. ATTENTION SERIES

5.4.1. It indicates a probable risk of accidents and advises about good practice of safety acts.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	ÁREA DE MOVIMENTAÇÃO DE CARGAS	34 x 47	In the laydown areas.	
Plate	NÃO ENTRE SOZINHO NESTA ÁREA	34 x 47		
Plate	CONSERVE AS ROTAS DE	34 x 47		

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	FUGA DESIMPEDIDAS			
Plate	USO OBRIGATÓRIO DE CAPACETE (illustrate)	34 x 47	In the access routes from accommodation to the process area.	
Plate	USE ÓCULOS DE SEGURANÇA (illustrate)	34 x 47	In the access routes from accommodation to the process area.	
Plate	USE PROTETOR AURICULAR (illustrate)	34 x 47	In the access routes from accommodation to the process area.	
Plate	CONECTE O CABO DE ATERRAMENTO TEMPORÁRIO	34 x 47		
Plate	USE PROTEÇÃO AUDITIVA, RÚIDO MÁXIMO -----dB(A) RÚIDO MÍNIMO ----- dB(A), MANTENHA ESTA PORTA FECHADA (illustrate)	24 x 34		
Plate	RADIAÇÃO – ÁREA RESTRITA	16 x 24		
Plate	RADIAÇÃO – AFASTE-SE (illustrate)	16 x 24		
Plate	NÃO TRANSITE SOBRE AS TUBULAÇÕES	34 x 47		
Plate	ÁREA RUIDOSA. USO OBRIGATÓRIO DE PROTEÇÃO AUDITIVA (illustrate)	24 x 34	In the access routes from accommodation to the process area.	
Plate	A PARTIR DESTA ÁREA É PROIBIDO FUMAR	34 x 47	In the access routes from accommodation to the process area.	
Plate	HOMENS TRABALHANDO NO INTERIOR DESTE EQUIPAMENTO (illustrate)	47 x 66		
Plate	ÁREA RESTRITA – ACESSO PERMITIDO SOMENTE A PESSOAS AUTORIZADAS	24 x 34		
Plate	PERIGO DE CHOQUE ELÉTRICO – RESTRIÇÃO DE ACESSO PARA PESSOAS NÃO AUTORIZADAS	34 x 47		


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Plate	CUIDADO – PORTA ABRINDO PARA ESSE LADO	24 x 34		
Adhesive	BOTOEIRA DE ALARME DE INCÊNDIO	24 x 34		
Adhesive	ESTA PORTA DEVE PERMANECER FECHADA (illustrate)	24 x 34		
Plate	SALA DA BATERIA ESTA SALA CONTÉM SISTEMAS DE BATERIAS CHUMBO-ÁCIDAS, E LÍQUIDOS CORROSIVOS (ELETRÓLITO), CIRCUITOS ELÉTRICOS ENERGIZADOS, E GÁS HIDROGÊNIO. ENTRADA SOMENTE DE PESSOAS AUTORIZADAS. REQUERIDO PROTEÇÃO DOS OLHOS. NÃO É PERMITIDO FUMAR OU USO DE CHAMAS.	34 x 47	In the access door to BATTERY ROOMS	

5.4.2. It indicates a probable risk of accidents and advises about good practice of safety acts related to Helideck area.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	NÃO FUMAR NÃO USE CHAPÉU, BONÉ OU CAPACETE – CUIDADO COM O ROTOR DA CAUDA	160 x 80	Access to the helideck.	
Plate	NÃO FUMAR NÃO USE CHAPÉU, BONÉ OU CAPACETE – CUIDADO COM O ROTOR DA CAUDA	100 x 50	At the helideck.	

5.4.3. It indicates a probable risk of accidents and advises about good practice of safety acts related to **Clean Agents Fixed Firefighting Systems**.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	AO SOAR O ALARME, SAIA IMEDIATAMENTE - GÁS INERTE APRESENTA RISCOS A SUA SEGURANÇA. (illustrate)	34 x 47	In the rooms/compartments protected	

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			by IG-541.	
Adhesive	AO SOAR O ALARME, SAIA IMEDIATAMENTE - GÁS INERTE APRESENTA RISCOS A SUA SEGURANÇA. (illustrate)	24 x 34	In the rooms/compartments protected by IG-541.	
Plate	AO SOAR O ALARME, SAIA IMEDIATAMENTE - AGENTE EXTINTOR HALOCARBONO APRESENTA RISCOS A SUA SEGURANÇA.	34 x 47	In the rooms/compartments protected by FK-5-1-12.	
Adhesive	AO SOAR O ALARME, SAIA IMEDIATAMENTE - AGENTE EXTINTOR HALOCARBONO APRESENTA RISCOS A SUA SEGURANÇA.	24 x 34	In the rooms/compartments protected by FK-5-1-12.	
Adhesive	GÁS INERTE - RISCOS A SUA SEGURANÇA. QUANDO ACIONADO O ALARME NÃO ENTRE NO AMBIENTE. (illustrate)	24 x 34	In the external accesses to the rooms/compartments protected by IG-541.	
Adhesive	AGENTE EXTINTOR HALOCARBONO - RISCOS A SUA SEGURANÇA. QUANDO ACIONADO O ALARME NÃO ENTRE NO AMBIENTE. (illustrate)	24 x 34	In the external accesses to the rooms/compartments protected by FK-5-1-12.	

Note: See Attachment B

5.5. SAFETY SERIES

5.5.1. It is designated to transmit instructions about safety conditions.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	NÃO LIMPE, LUBRIFIQUE OU REPARE MÁQUINAS EM MOVIMENTO.	34 x 47		

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Plate	NÃO TRANSITE SOBRE OS TRILHOS	34 x 47		
Plate	CHUVEIRO DE EMERGÊNCIA E LAVA OLHOS (illustrate)	34 x 47		
Plate	EVITE QUEDAS, ANDE, NÃO CORRA	34 x 47	In the access routes from accommodation to the process area.	
Plate	AO MANUSEAR PRODUTOS QUÍMICOS, USE OS EQUIPAMENTOS DE PROTEÇÃO ADEQUADOS	34 x 47	In the chemical unit and products storage area.	
Plate	NÃO DEIXE CARGAS SOLTAS NO CONVÉS	34 x 47		
Plate	NUNCA INICIE UM TRABALHO SEM PERMISSÃO POR ESCRITO	34 x 47		
Plate	NÃO COLOQUE MATERIAIS OU EQUIPAMENTOS SOBRE OS TRILHOS	34 x 47		
Plate	É PERMITIDO FUMAR NESTE LOCAL (illustrate)	34 x 47		
Plate	MANTENHA OS CILINDROS PRESOS (illustrate)	34 x 47		
Plate	MANTENHA A ÁREA LIMPA E ARRUMADA (illustrate)	34 x 47		
Plate	PEDE-SE A PERMANÊNCIA DE PELO MENOS DOIS FUNCIONÁRIOS NESTE LOCAL DE TRABALHO	34 x 47		
Plate	MANTENHA AS EMBALAGENS FECHADAS	34 x 47		
Adhesive	NÃO LIMPE, LUBRIFIQUE OU REPARE MÁQUINAS EM MOVIMENTO	24 x 34		
Adhesive	EVITE QUEDAS, ANDE, NÃO CORRA	24 x 34	In the access routes from accommodation to the process area.	
Adhesive	É PERMITIDO FUMAR NESTE LOCAL (illustrate)	24 x 34		
Adhesive	PRIMEIROS SOCORROS	24 x 34		

Note: See Attachment C

5.6. THINK SERIES

5.6.1. It is designated to transmit instructions to prevent accidents in general.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	EM CADA UM A SEGURANÇA DE TODOS	34 x 47		
Plate	FAÇA DA SEGURANÇA UM HÁBITO	34 x 47		
Plate	DISTRAÇÕES CAUSAM ACIDENTES	34 x 47		
Plate	NÃO SE ARRISQUE, VERIFIQUE TUDO ANTES DE INICIAR UM TRABALHO	34 x 47		
Plate	SEGURANÇA É SERVIÇO DE EQUIPE. COLABORE	34 x 47		
Plate	OS EQUIPAMENTOS DE PROTEÇÃO PREVINEM ACIDENTES	34 x 47	In the access routes from accommodation to the process area.	
Plate	O BOM PLANEJAMENTO EVITARÁ ACIDENTES	34 x 47		
Plate	TRABALHE COM SEGURANÇA	34 x 47	In the access routes from accommodation to the process area.	
Plate	PREVENIR ACIDENTES É DEVER DE TODOS	34 x 47	In the access routes from accommodation to the process area.	
Adhesive	EM CADA UM A SEGURANÇA DE TODOS	24 x 34	In the access routes from accommodation to the process area.	
Adhesive	TRABALHE COM SEGURANÇA	24 x 34	In the access routes from accommodation to the	

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			process area.	
Adhesive	PREVENIR ACIDENTES É DEVER DE TODOS	24 x 34	In the access routes from accommodation to the process area.	
Adhesive	FAÇA DA SEGURANÇA UM HÁBITO	24 x 34	In the access routes from accommodation to the process area.	

Note: See Attachment D

5.7. HYGIENE SERIES

5.7.1. They are designated to transmit instructions about cleaning and hygiene.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	MANTENHA LIMPO O SEU LOCAL DE TRABALHO	34 x 47		
Plate	MANTENHA OS BANHEIROS LIMPOS	34 x 47		
Plate	LAVE AS MÃOS ANTES DAS REFEIÇÕES	34 x 47		
Plate	COLABORE COM A LIMPEZA	34 x 47		
Adhesive	MANTENHA LIMPO O SEU LOCAL DE TRABALHO	24 x 34		
Adhesive	MANTENHA OS BANHEIROS LIMPOS	24 x 34		
Adhesive	LAVE AS MÃOS ANTES DAS REFEIÇÕES	24 x 34		
Adhesive	COLABORE COM A LIMPEZA	24 x 34		

Note: See Attachment E.

5.8. WARNING SERIES

5.8.1. The plates of this series shall be used to transmit instructions and information to the employee.

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TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	MANTENHA ESTA PORTA FECHADA. AMBIENTE PRESSURIZADO	34 x 47		
Plate	O LANÇAMENTO DE ÓLEO OU DETRITOS EM ÁGUAS BRASILEIRAS É CONSIDERADO PELA LEI 9966 DE 28 DE ABRIL DE 2000, COMO INFRAÇÃO E SUJEITO À MULTA. EVITE-O!	34 x 47		
Plate	NÃO PREPARE TINTAS NESTE LOCAL	34 x 47		
Plate	A ADV-5423XXX, QUE PROTEGE ESSA ZONA, ESTÁ LOCALIZADA NO YYY	34 x 47		
Plate	ÁREA SUJEITA À RADIAÇÃO TÉRMICA. NÃO PERMANECER EM CASO DE VENTOS FORTES	34 x 47		
Plate	ESTA ADV PROTEGE A ZONA XXX	34 x 47		
Plate	ESTE EQUIPAMENTO PERMANECERÁ ENERGIZADO MESMO EM CASO DE EMERGÊNCIA	16 X 24		
Plate	ESTE SKID PROTEGE O COAMING N1-XXX	34 x 47		

Note: See Attachment F.

5.8.2. Another plates used to transmit warning instructions and information to the employee in equipment shall be in Portuguese or add plate with translation.

5.9. INDICATIVE SERIES

5.9.1. The plates of this series shall be used to transmit direction instructions to the employee.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	RECEPÇÃO (Right or left arrow)	24 x 34		
Plate	ENFERMARIA (Right or left arrow)	24 x 34		

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Plate	REFEITÓRIO (Right or left arrow)	24 x 34		
Plate	SEGURANÇA INDUSTRIAL/SALVATAGEM (Right or left arrow)	24 x 34		
Plate	SALA DE JOGOS (Right or left arrow)	24 x 34		
Plate	CINEMA (Right or left arrow)	24 x 34		
Plate	CAMAROTES (Right or left arrow)	24 x 34		
Plate	PONTO DE REUNIÃO (Right or left arrow) (illustrate)	24 x 34		
Plate	BALEEIRA (Right or left arrow)	24 x 34		
Plate	BOTE DE RESGATE (Right or left arrow)	24 x 34		
Plate	BALSA INFLÁVEL (Right or left arrow)	24 x 34		
Plate	BOIA SALVA-VIDAS (Right or left arrow)	24 x 34		
Plate	SAÍDA DE EMERGÊNCIA	24 x 34		
Plate	SAÍDA (Arrow sense: Right or left) (illustrate)	24 x 34		
Plate	SAÍDA (Arrow sense: Up) (illustrate)	24 x 34		
Plate	SAÍDA (Arrow sense: going down or up the stairs) (illustrate)	24 x 34		
Adhesive	REFEITÓRIO (Right or left arrow)	24 x 34		
Adhesive	SEGURANÇA INDUSTRIAL/SALVATAGEM (Right or left arrow)	24 x 34		
Adhesive	SALA DE JOGOS (Right or left arrow)	24 x 34		
Adhesive	CINEMA (Right or left arrow)	24 x 34		
Adhesive	CAMAROTES (Right or left arrow)	24 x 34		
Adhesive	PONTO DE REUNIÃO (Right or left arrow) (illustrate)	24 x 34		
Adhesive	BALEEIRA (Right or left arrow)	24 x 34		
Adhesive	BOTE DE RESGATE (Right or left arrow)	24 x 34		

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Adhesive	BALSA INFLÁVEL (Right or left arrow)	24 x 34		
Adhesive	BOIA SALVA-VIDAS (Right or left arrow)	24 x 34		
Adhesive	SAÍDA DE EMERGÊNCIA	24 x 34		
Adhesive	SAÍDA (Arrow sense: Right or left) (illustrate)	24 x 34		
Adhesive	SAÍDA (Arrow sense: Up) (illustrate)	24 x 34		
Adhesive	SAÍDA (Arrow sense: going down or up the stairs) (illustrate)	24 x 34		

Note: See Attachment G.


5.10. IDENTIFICATION SERIES

5.10.1. The plates of this series shall be used to guide the employee as the identification of equipment or local of work.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Adhesive according DPC	BÓIAS SALVA-VIDAS COM RETINIDA	15 x 15		
Adhesive according DPC	BÓIAS SALVA-VIDAS COM RETINIDA E SINAL LUMINOSO	15 x 15		
Adhesive according DPC	BÓIAS SALVA-VIDAS COM RETINIDA, SINAL LUMINOSO E FUMÍGENO.	15 x 15		
Adhesive according DPC	PONTO DE REUNIÃO	15 x 15		
Adhesive according DPC	EXTINTOR – CO ₂	24 x 34		
Adhesive according DPC	EXTINTOR – PÓ QUÍMICO	24 x 34		
Adhesive according DPC	EXTINTOR – ÁGUA	24 x 34		
Adhesive according DPC	EXTINTOR – CLASSE D	24 x 34		
Adhesive	BALEEIRA 1, 2, 3 ou 4	24 x 34		

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ESUP				
according DPC				
Adhesive according DPC	BOTE DE RESGATE	24 x 34		
Adhesive according DPC	BALSA INFLÁVEL	24 x 34		
Adhesive according DPC	POSTO DE ABANDONO 1, 2 ou 3	24 x 34		
Adhesive according DPC	ESTAÇÃO DE ABANDONO DE VANTE	24 x 34		
Adhesive according DPC	MACA	24 x 34		
Adhesive according DPC	CAIXA PARA COLETES SALVA-VIDAS	24 x 34		
Adhesive according DPC	APARELHO DE RESPIRAÇÃO AUTÔNOMO	24 x 34		
Plate	DISPARO MANUAL REMOTO DE IG-541 (Acione as duas botoeiras)	24 x 34		
Plate	DISPARO MANUAL REMOTO DE FK-5-1-12 (Acione as duas botoeiras)	24 x 34		
Plate	DISPARO MANUAL LOCAL DE IG-541 (illustrate)	24 x 34		
Plate	DISPARO MANUAL LOCAL DE FK-5-1-12 (illustrated)	24 x 34		
Plate	VÁLVULA DIRECIONAL (illustrated)	24 x 34		
Plate	BATERIA DE IG-541 (illustrated)	24 x 34		
Plate	BATERIA DE FK-5-1-12 (illustrated)	24 x 34		
Plate	WATER MIST – ESTA ZONA É PROTEGIDA POR SISTEMA DE WATER MIST	24 x 34		
Plate	DISPARO MANUAL REMOTO DO SISTEM DE WATER MIST	24 x 34		
Plate	SISTEMA DE WATER MIST ACIONADO	24 x 34	In the external accesses to the rooms/compart	

			ments protected by water mist system.	
Plate	COMPARTIMENTO DO SISTEMA DE WATER MIST	24 x 34		
Plate	BATERIA DE CILINDROS DE NITROGÊNIO	24 x 34		
Plate	ARMÁRIO DE EQUIPAMENTOS DE APOIO À BRIGADA	24 x 34		
Plate	CANHÃO MONITOR DE ESPUMA	24 x 34		
Plate	ZONA XXX (illustrate)	24 x 34		
Plate	HIDRANTE (illustrate)	24 x 34		
Plate	ACIONADOR MANUAL DE DILÚVIO (illustrate)	24 x 34		
Plate	DISPARO REMOTO DO DILÚVIO	24 x 34		
Plate	DILÚVIO – ESTA ZONA É PROTEGIDA POR DILÚVIO (illustrate)	24 x 34		
Plate	DISPOSITIVO PARA RESPIRAÇÃO PARA FUGA DE EMERGÊNCIA (EEBD)	24 x 34		
Adhesive	DISPARO MANUAL REMOTO DE IG-541 (Acione as duas botoeiras)	24 x 34		
Adhesive	DISPARO MANUAL REMOTO DE FK-5-1-12 (Acione as duas botoeiras)	24 x 34		
Adhesive	DISPARO MANUAL LOCAL DE IG-541 (illustrate)	24 x 34		
Adhesive	DISPARO MANUAL LOCAL DE FK-5-1-12 (illustrate)	24 x 34		
Adhesive	VÁLVULA DIRECIONAL (illustrate)	24 x 34		
Adhesive	BATERIA DE IG-541 (illustrate)	24 x 34		
Adhesive	BATERIA DE FK-5-1-12 (illustrate)	24 x 34		
Adhesive	WATER MIST – ESTA ZONA É PROTEGIDA POR SISTEMA DE WATER MIST	24 x 34		
Adhesive	DISPARO MANUAL REMOTO DO SISTEM DE WATER MIST	24 x 34		

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			INTERNAL
			ESUP

Adhesive	COMPARTIMENTO DO SISTEMA DE WATER MIST	24 x 34		
Adhesive	BATERIA DE CILINDROS DE NITROGÊNIO	24 x 34		
Adhesive	ARMÁRIO DE EQUIPAMENTOS DE APOIO À BRIGADA	24 x 34		
Adhesive	ZONA XXX (illustrate)	24 x 34		
Adhesive	HIDRANTE (illustrate)	24 x 34		
Adhesive	ACIONADOR MANUAL DE DILÚVIO (illustrate)	24 x 34		
Adhesive	DISPARO REMOTO DO DILÚVIO	24 x 34		
Adhesive	DILÚVIO – ESTA ZONA É PROTEGIDA POR DILÚVIO (illustrate)	24 x 34		
Adhesive	DISPOSITIVO PARA RESPIRAÇÃO PARA FUGA DE EMERGÊNCIA (EEBD)	24 x 34		

Note: See Attachment H.

5.11. IDENTIFICATION OF AREA CLASSIFICATION

5.11.1. The plates or adhesive vinyl of this series shall be used to guide the employee as the identification of all Area Classification. Shall be visible in area.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Plate	AREA CLASSIFICADA – RISCO DE FORMAÇÃO DE ATMOSFERA EXPLOSIVA (illustrate)	25 x 18 (A4) 35 x 25 (A3) 50 x 35 (A2)	In the accesses to classified areas.	

Note: See Attachment I.

5.12. IDENTIFICATION OF ESCAPE ROUTES BY ADHESIVE STRIPS

5.12.1. The adhesive vinyl strips shall be used to guide the employee as the identification of all internal escape routes.

TYPE	TEXT	DIMENSION (cm)	LOCATION (item 5.2)	QUANT. (item 5.2)
Adhesive strip rolls	No text (illustrate)	5,0 (WIDTH)		
Adhesive	Arrows according to item 2.7 (illustrate)	7,0 x 20,0		

Note: See Attachment J.

5.13. ESPECIFIC IDENTIFICATION FOR ELECTRICAL EQUIPMENTS


5.13.1. When using the figures and formats according to the ISO 7010 - Graphical Symbols — Safety colors and safety signs — Registered safety - Third edition (Published Date: July 2019) standard, the symbols shall be together with a warning legend (electric shock, high voltage, etc.) and / or voltage class of the equipment.

5.13.2. According NR 10, item 10.3.3.1, electrical circuits with different purposes, such as: communication, signaling, electric control and traction shall be identified and installed separately.

5.13.3. Warning signs shall be installed at the entrance to the rooms with electrical equipment containing the words in Portuguese: “É vedado o uso de adornos pessoais nos trabalhos com instalações elétricas ou em suas proximidades.” Type Plate, 34 x 47, according to ATTACHMENT A.

5.13.4. The notices and warnings shall be in visible places of panels in the minimum amount of 1(one) safety notice/warning per face of MEDIUM VOLTAGE SWITCHGEARS/MCC AND LOW VOLTAGE SWITCHGEARS. For panels with multiple columns, it is not necessary a warning per column.

5.13.5. The rear doors of MEDIUM VOLTAGE SWITCHGEARS/MCC AND LOW VOLTAGE SWITCHGEARS must be identified with the number/name of their respective column. The same rule applies for electrical panels with multiple columns.

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		INTERNAL	
		ESUP	

5.13.6. All electrical equipment shall have their working voltage identified by an adhesive label, painting or plate, in a visible place on the equipment, in addition to the marking on its identification plate.

5.13.7. The position indication of the electrical circuits switching devices shall be signaled at least by a label with the following colors: Green - signaling “off” position; and Red - signaling “on” position. When accompanied by text, the information in Portuguese shall be complemented.

5.13.8. The TAG’s (identification number of PETROBRAS) of the equipment shall be painted or described on stickers, in addition to the identification plate, on each side of the Power Panel (MEDIUM VOLTAGE SWITCHGEARS/MCC AND LOW VOLTAGE SWITCHGEARS) in a legible way.

5.13.9. The preferred provisory grounding points of the equipment shall be identified / pointed on the external face of the panel.

5.13.10. Warnings shall follow the standard labels as required in ABNT NBR 16820.

5.13.11. For all panels and electrical equipment fed by a transformer with rated power higher than 125 kVA, the following label applies. The Panels shall have warning labels following the model below, with the values of rated voltage (in field “Nível de Tensão”), arc fault incident energy (in field “Energia Incidente”) and arc-flash hazard distance (in field “Distância Segura de Aproximação para Atividades Sujeitas a Arco Elétrico”). The values to be filled in will be informed to Panel Manufacturer during Detailed Design.

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		ESUP	



- 5.13.12.** It shall be provided a specific plate with warnings and instructions to access the limiters' compartment.
- 5.13.13.** Panels shall have warning labels indicating the protective clothing risk category that shall be used for technical intervention.
- 5.13.14.** Panels shall have warning labels indicating that any technical intervention in the panels shall be executed only by authorized people.
- 5.13.15.** Panels shall have labels with a brief description of the interlocks and allowed/forbidden momentary parallelisms written in Portuguese. For the allowed momentary parallelism, there shall be an additional label with details regarding to synchronization and load transfer operation. The label shall also include the document number which details the interlocks and momentary parallelisms.
- 5.13.16.** Panels shall have labels with information about the control voltage supply characteristics in Portuguese, including information about control voltage earthing and expected autonomy of the unit's battery chargers.
- 5.13.17.** Each functional unit shall have labels indicating the maximum continuous current capacity of the functional unit, protection functions parameterized and the related relay parameterization report.

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		INTERNAL	
		ESUP	

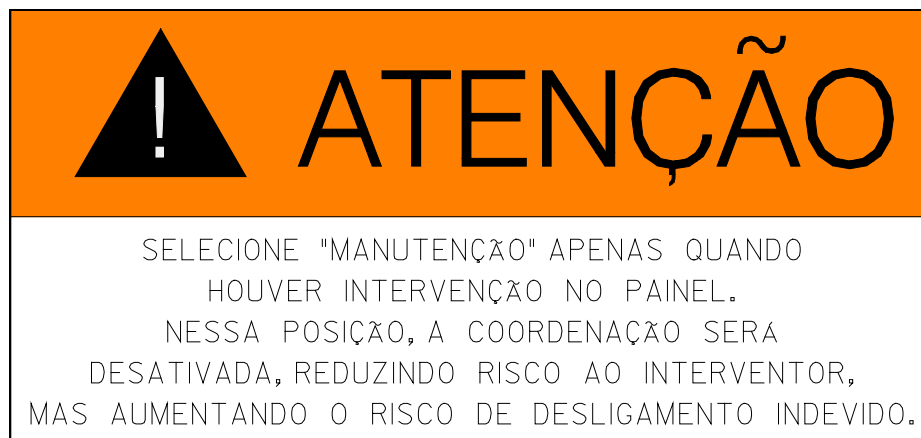
5.13.18. Limiter cubicle shall have a label indicating clearly the blocking criteria implemented for the limiter operation.

5.13.19. Functional units with grounding switch shall have a label indicating clearly the interlock and inhibition of circuit-breaker closing.

5.13.20. Incomers functional units shall have a label indicating the TAG of the feeder panel.

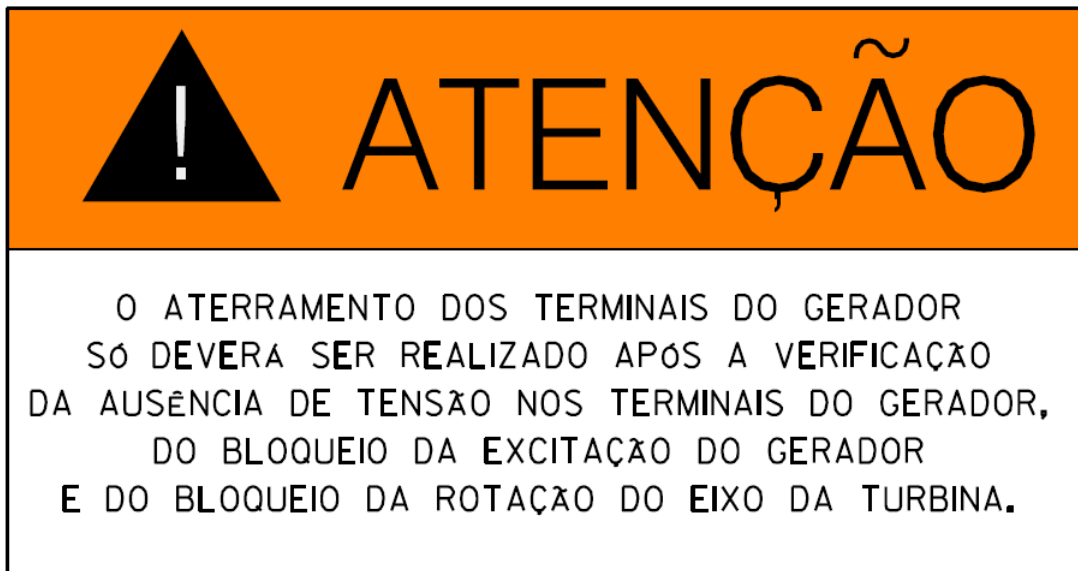
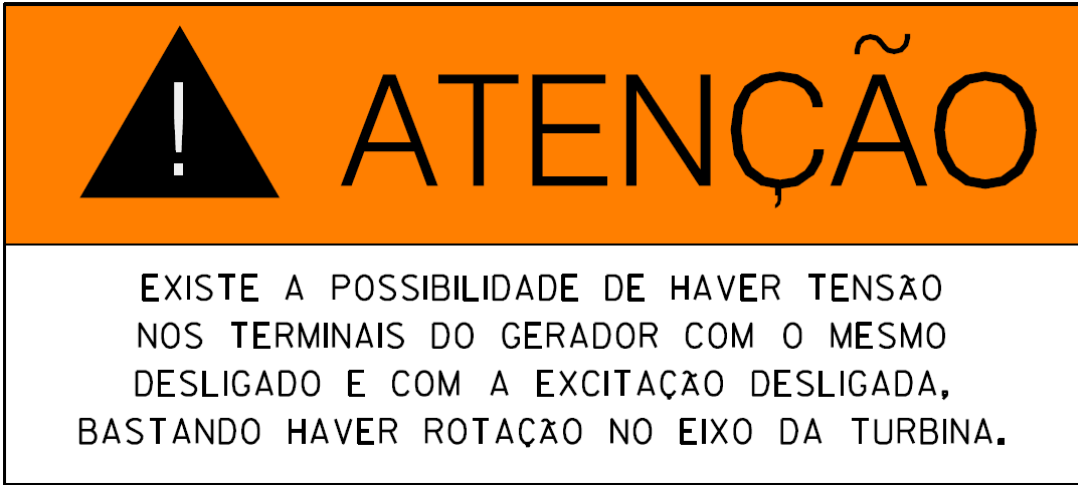
5.13.21. Ungrounded system panels shall have a label indicating if the earth fault indicator trips the functional unit or only send an alarm to Electrical System Automation.

5.13.22. For Power Panels that have one key activated selector switch in their front side with the positions “Operação / Manutenção” (Operation / Maintenance). There shall be a local signaling lamp, turned on with the switch in “Manutenção” position, indicating “Coordenação Desativada”. There shall be a label beside the switch with the following warning text:



Observation: the labels shall adopt the format of ATTACHMENT B.

5.13.23. There shall be warning labels near the mechanical actuator of grounding switch of incomer sections of CDC (MEDIUM VOLTAGE SWITCHGEARS/MCC) with the following warning texts:




Observation: the labels shall adopt the format of ATTACHMENT B.

5.13.24. Each panel division for transport shall be provided with external accessible terminals to energize the heating circuits during storage periods. These terminals shall have a label as following:



Observation: the labels shall adopt the format of ATTACHMENT B.

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		INTERNAL	
		ESUP	

5.13.25. Thyristor panels shall have warning labels, with the values of rated voltage (in field “Nível de Tensão”), arc fault incident energy (in field “Energia Incidente”) and arc-flash hazard distance (in field “Distância Segura de Aproximação para Atividades Sujeitas a Arco Elétrico”). The values to be filled in will be informed to Panel Manufacturer during Detailed Design.

5.13.26. There shall be provided warning plates at all incomings of power panel, listing the circuit-breakers that shall be extracted to permit the maintenance of the respective power panel heater.

5.13.27. Each socket-outlet shall have a plate informing the service voltage and rated current.

5.13.28. Socket-outlets supplied by emergency loads UPS AC shall be clearly identified with inefaceable labels showing:




Observation: the labels shall adopt the format of ATTACHMENT B.

5.13.29. A warning plate shall be located next to the Auxiliary Terminal Box with the label:



Observation: the labels shall adopt the format of ATTACHMENT B.

5.13.30. Temporary groundings for fuel and oil loading hoses shall be signaled with the words “Caution, risk of sparking by static energy - temporary grounds must remain

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		INTERNAL	
		ESUP	

connected for as long as the equipment is in operation.” Observation: the labels must use the form of ATTACHMENT F with the symbol:



(symbol M005 of standard ISO 7010)

5.13.31. Special risk warnings may be required in electrical equipment for explosive atmospheres in order to adapt them to the recommendations of their certificates.

5.13.32. Capacitor circuits, including UPS’s (internal warning) and high voltage equipment such as medium and high voltage motors (terminal boxes) shall have a risk warning similar to: “Circuito com Capacitores - Certifique-se da completa desenergização do sistema e de todos os componentes elétricos em contato com os terminais dos capacitores.”

6. ATTACHMENTS

DANGER SERIES:

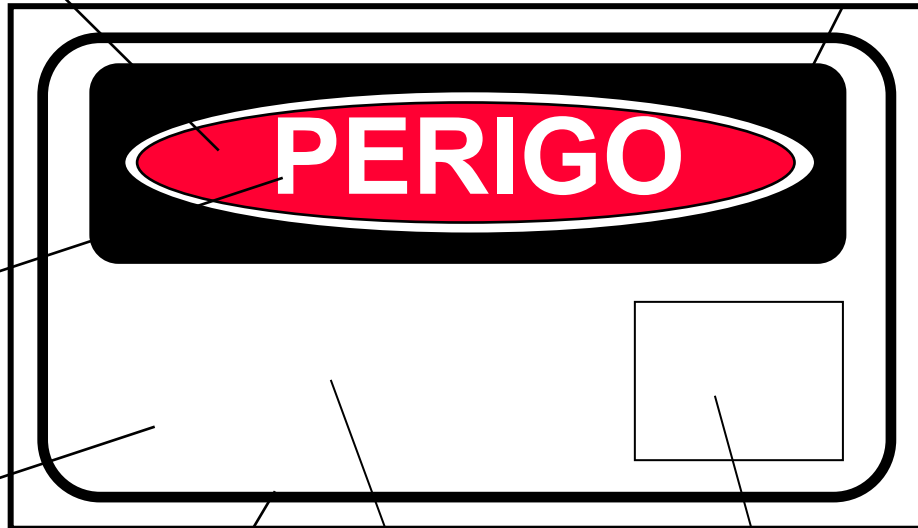
ATTACHMENT A:

RED OVAL BACKGROUND

**WHITE
LETTERS**

**WHITE
BACKGROUND**

BLACK OUTLINE



**BLACK
TEXT**

**ILLUSTRATIVE
FIGURE**



**PETROLEO
BRASILEIRO S.A.
PETROBRAS**

DANGERS SERIES – EXAMPLES:



PLATE



PLATE



ADHESIVE



PLAT



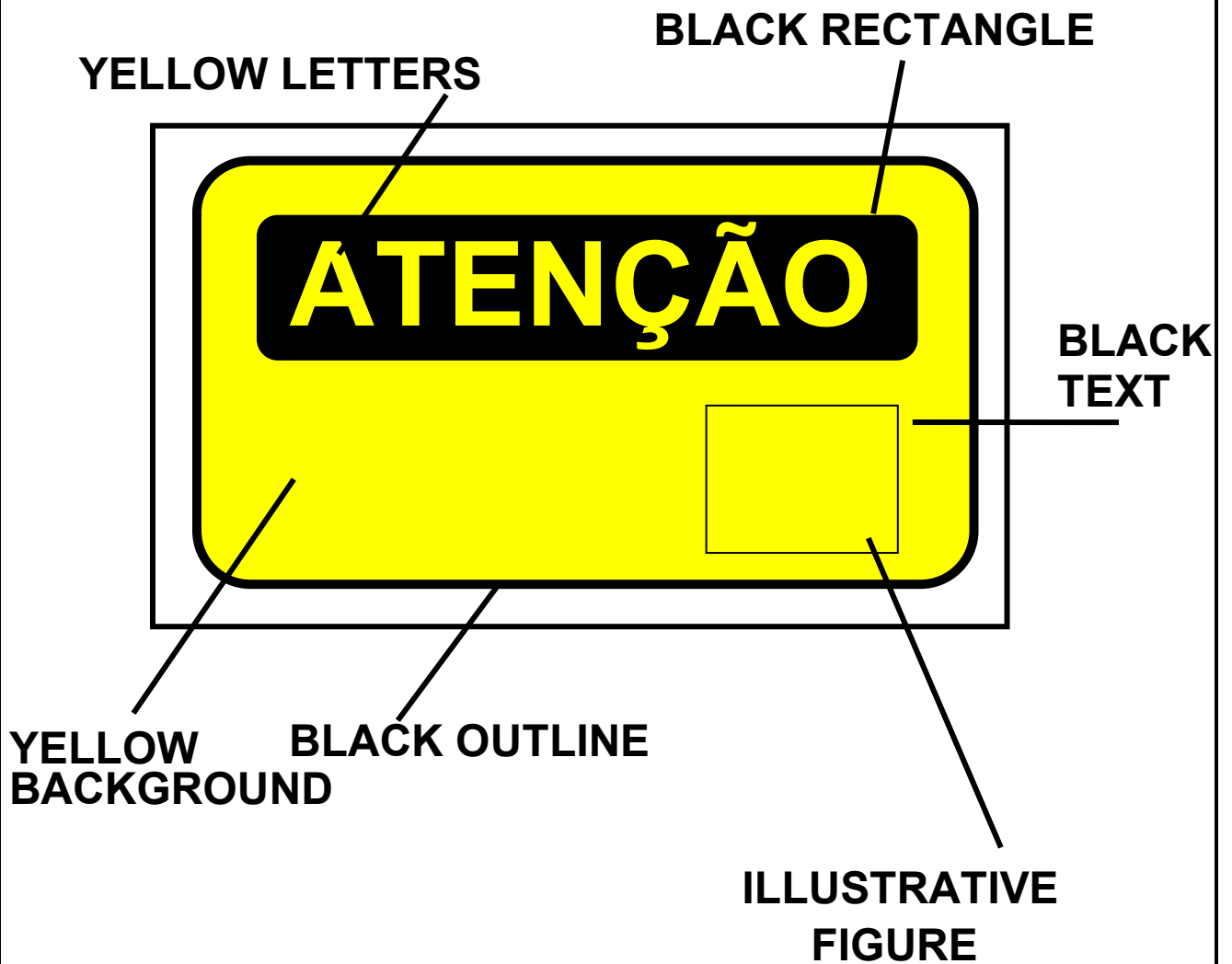
ADHESIVE / PLATE



PLATE

ATTENTION SERIES:

ATTACHMENT B:





PETRÓLEO BRASILEIRO
PETROBRAS

ATTENTION

SERIES

-



PLATE

ADHESIVE

SAFETY SERIES:

ATTACHMENT C:

WHITE LETTERS

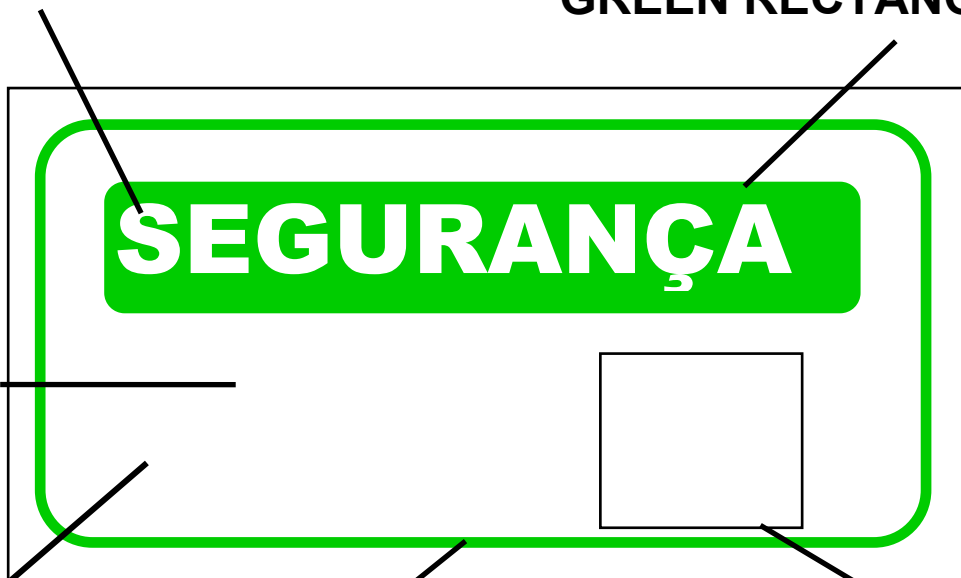
GREEN RECTANGLE

**BLACK
TEXT**

**WHITE
BACKGROUND**

GREEN OUTLINE

**ILLUSTRATIVE
FIGURE**



Sign at Each Manual Actuation Station.

SEGURANÇA

**MANTENHA OS
CILINDROS
PRESOS**



SEGURANÇA

**É PERMITIDO
FUMAR
NESTE LOCAL**



SEGURANÇA

**MANTENHA A
ÁREA LIMPA E
ARRUMADA**



SEGURANÇ

**CHUVEIRO DE
EMERGÊNCIA
E LAVA-
OLHOS**



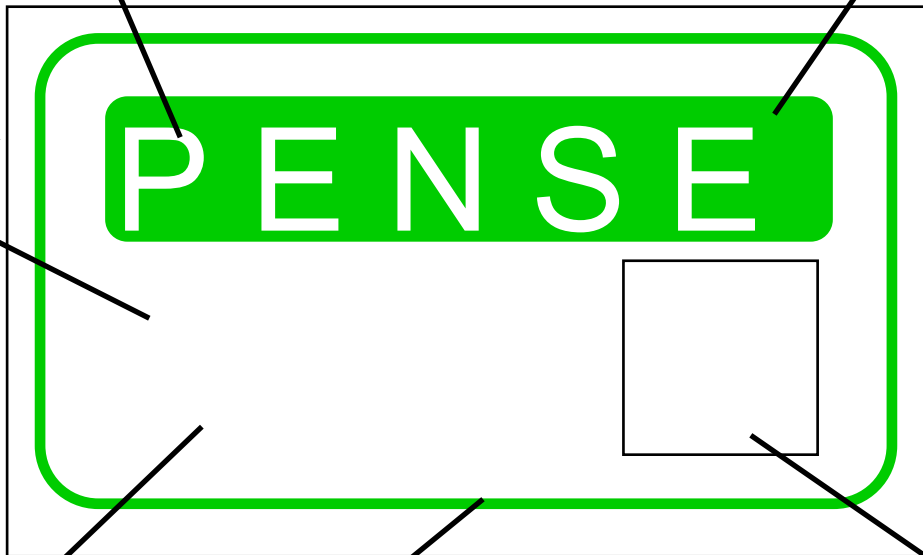
THINK SERIES:

ATTACHMENT D:

WHITE LETTERS

GREEN RECTANGLE

BLACK
TEXT



WHITE
BACKGROUN
D

GREEN OUTLINE

ILLUSTRATIVE
FIGURE

HYGIENE SERIES:

ATTACHMENT E:

WHITE LETTERS

BLUE RECTANGLE



**WHITE
BACK GROUND**

BLUE OUTLINE

**ILLUSTRATIVE
FIGURE**

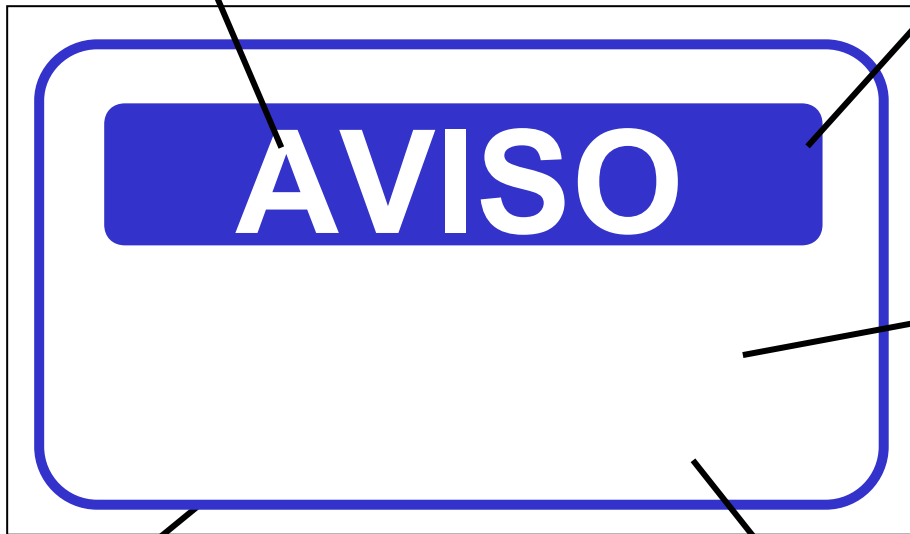
BLACK TEXT

WARNING SERIES:

ATTACHMENT F:

WHITE LETTERS

BLUE RECTANGLE



BLACK
TEXT

BLUE OUTLINE

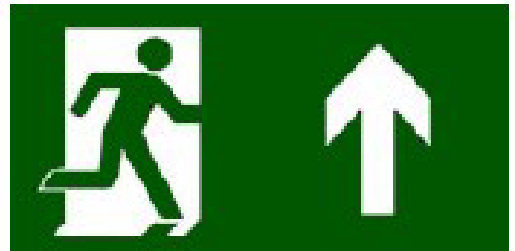
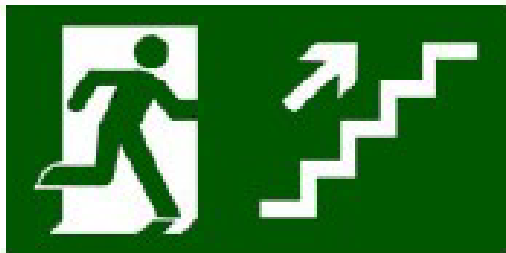
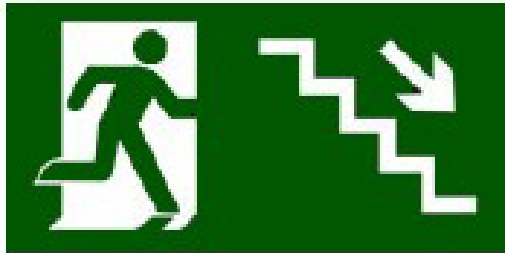
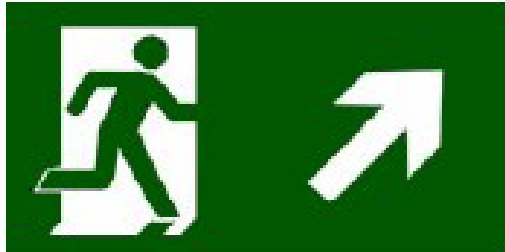
WHITE
BACKGROUND

Examples of warning symbols for electrical equipment:



INDICATIVE SERIES:

ATTACHMENT G:



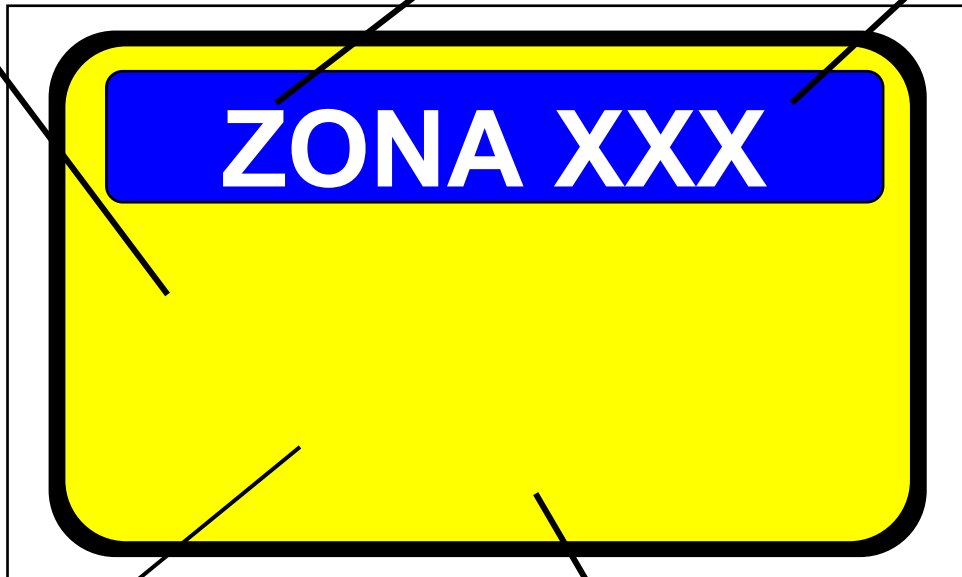
IDENTIFICATION SERIES:

ATTACHMENT H:

**BLACK TEXT
(AREA
IDENTIFICATION)**

**WHITE
LETTERS**

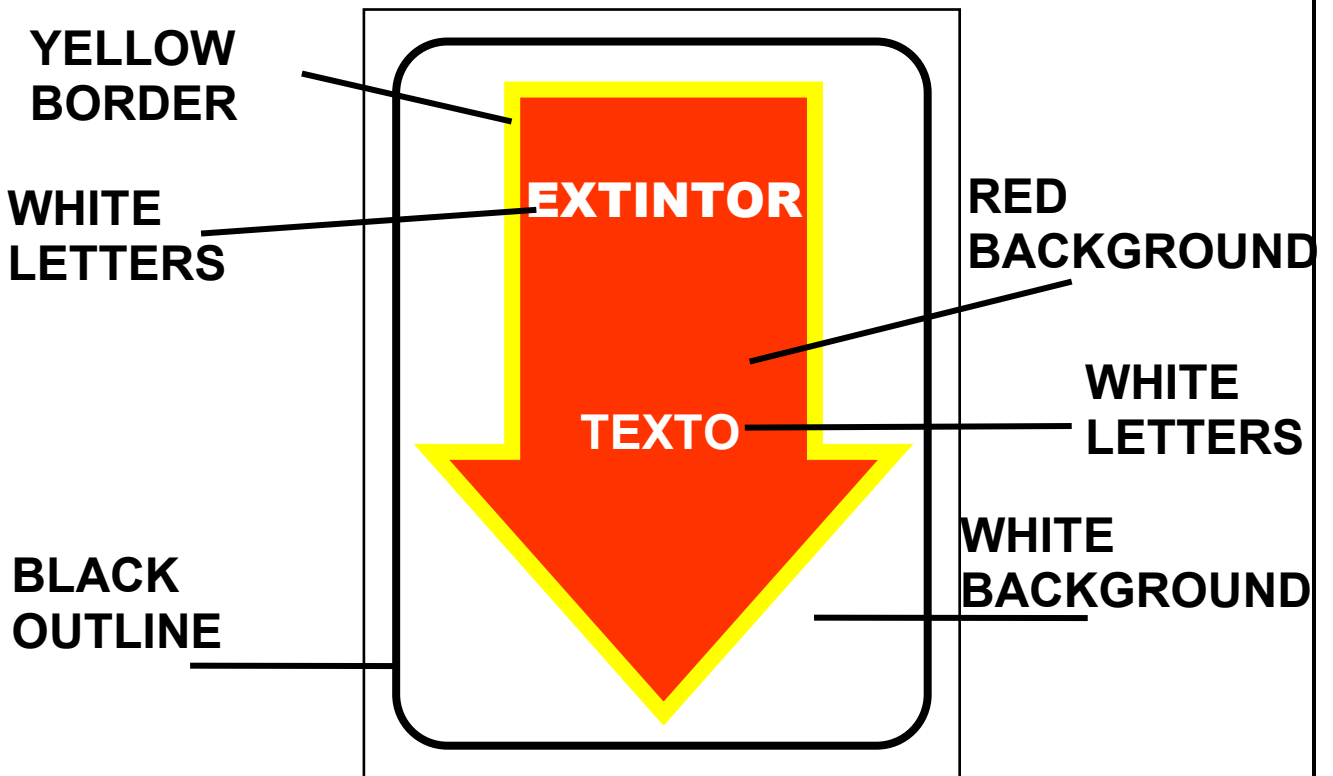
**BLUE
BACKGROUND**



BLACK TEXT

**YELLOW
BACKGROUN**

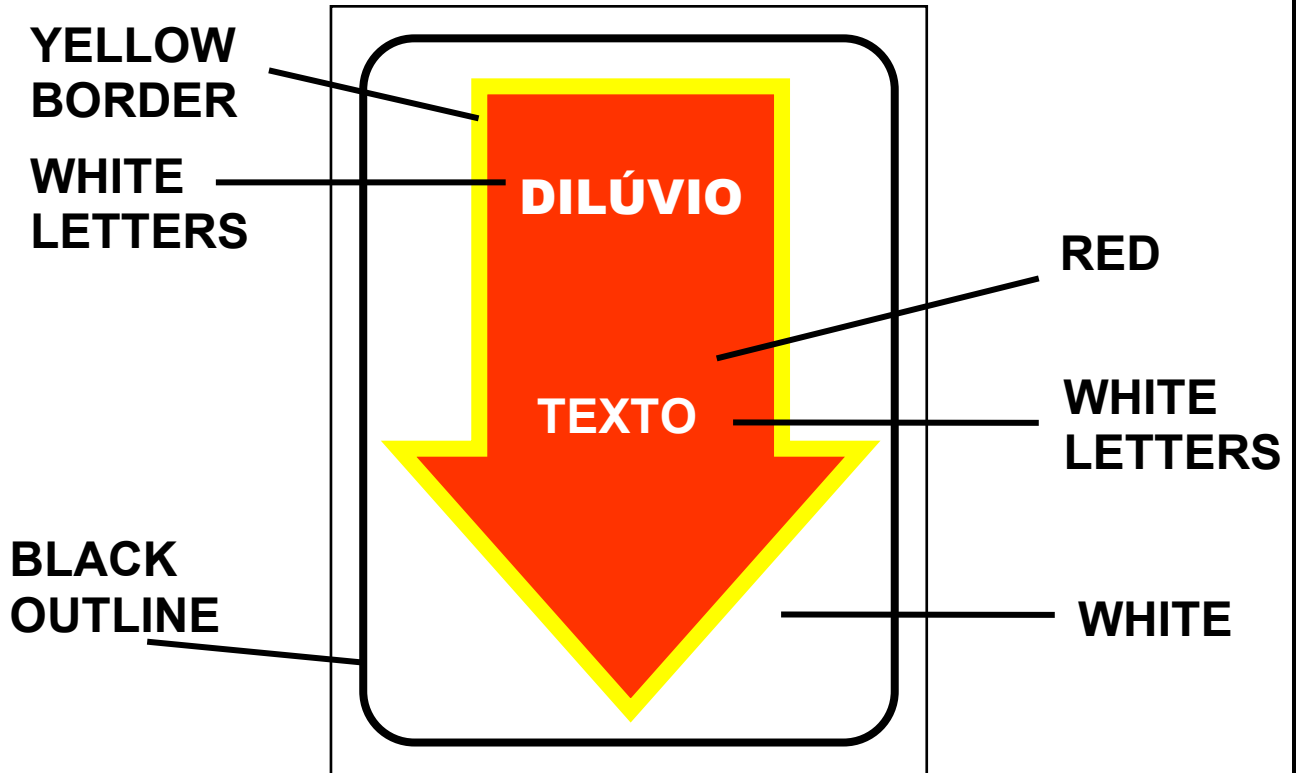
IDENTIFICATION SERIES:



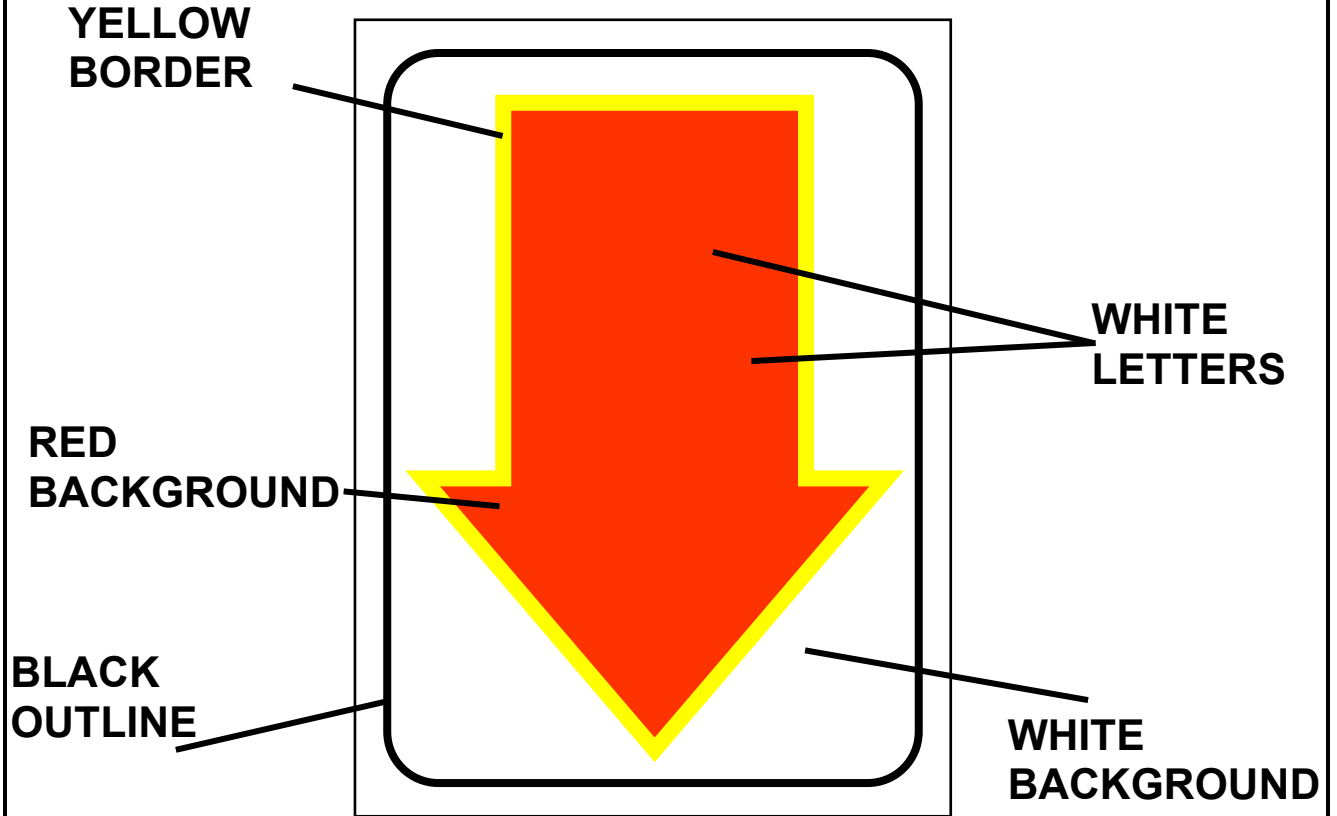
ADDITIONALLY FOR INTERNAL ESCAPE ROUTES:



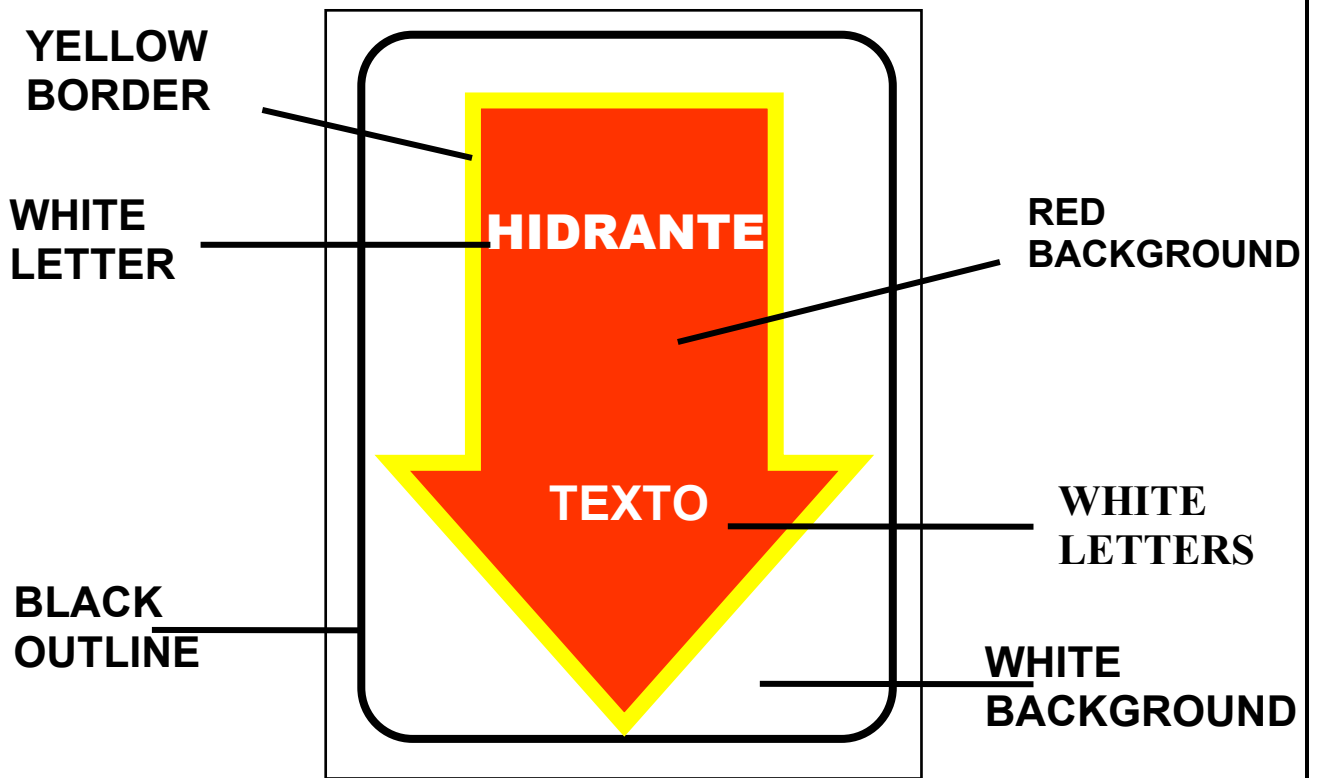
IDENTIFICATION SERIES:



IDENTIFICATION SERIES:



IDENTIFICATION SERIES:



ADDITIONALLY FOR INTERNAL ESCAPE ROUTES:



IDENTIFICATION

WHITE
LETTE

BLUE
BACKGROUND



BLACK
LETTERS

YELLOW
BACKGROUND

IDENTIFICATION SERIES:

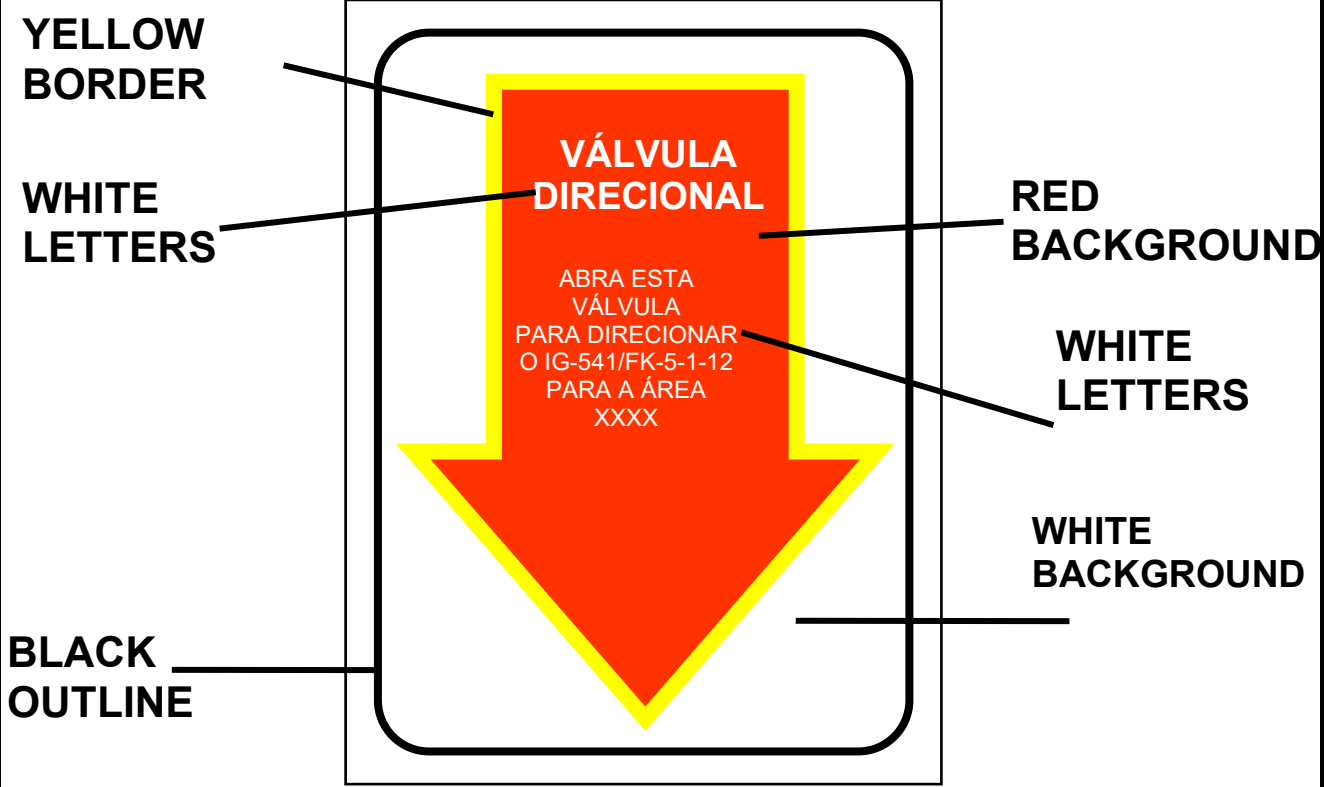
BATERIA DE IG-541 / FK-5-1-12

A BATERIA QUE PROTEGE ESTE LOCAL ENCONTRA-SE DENTRO DA SALA.....

BATERIA DE IG-541 / FK-5-1-12

A VÁLVULA DIRECIONAL E A BATERIA DE IG-541/FK-5-1-12 QUE PROTEGE ESTE LOCAL ENCONTRAM-SE NA

IDENTIFICATION SERIES:



IDENTIFICATION SERIES:

**YELLOW
BORDER**

**WHITE
LETTERS**

**BLACK
OUTLINE**



**RED
BACKGROUND**

**WHITE
LETTERS**

**WHITE
BACKGROUND**

AREA CLASSIFICATION:

ATTACHMENT I:



IDENTIFICATION OF ESCAPE ROUTES BY ADHESIVE STRIPS:

ATTACHMENT J:

