


NR 18 - SEGURANÇA E SAÚDE NO TRABALHO  
NA INDÚSTRIA DA CONSTRUÇÃO

---

## 18.7 ETAPAS DE OBRA



BRASILEQ

João Paulo Maciel de Abreu, Eng. Civil, M.Sc.

---

---

---

---

---

---

---

---



## DEMOLIÇÃO

---

---

---

---


---

---

---

---

- a) as linhas de fornecimento de energia elétrica, água, inflamáveis líquidos e gasosos liquefeitos, substâncias tóxicas, canalizações de esgoto e de escoamento de água e outros;
- b) as construções vizinhas à obra;
- c) a remoção de materiais e entulhos;
- d) as aberturas existentes no piso;
- e) as áreas para a circulação de emergência;
- f) a disposição dos materiais retirados;
- g) a propagação e o controle de poeira;
- h) o trânsito de veículos e pessoas.



---

---

---

---

---

---

---

---



**ESCAVAÇÃO,  
FUNDAÇÃO E  
DESMONTE DE  
ROCHAS**

---

---

---


---

---

---

---


prout875 | Pixabay



**SINALIZAÇÃO DE  
ADVERTÊNCIA**



**BARREIRA DE  
ISOLAMENTO**



---

---

---

---


---

---

---

prout875 | Pixabay

**1,25 m**



---

---

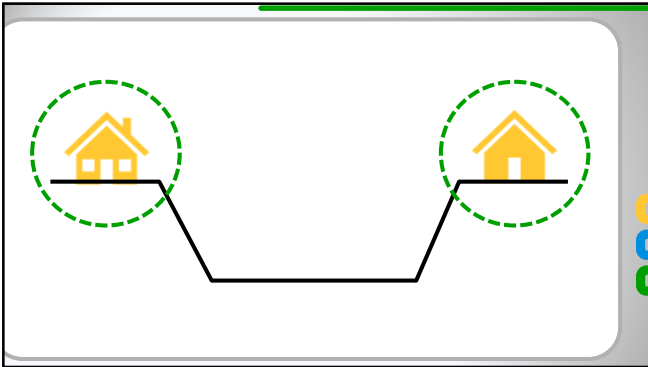
---

---

---

---

---



---

---

---

---

---


---

---

---

**BATE-ESTACAS**

1. Cabos de sustentação do pilão, em qualquer posição de trabalho, devem ter comprimento mínimo em torno do tambor definido pelo fabricante ou pelo profissional legalmente habilitado.
2. Pilão sobre o solo ou posição de repouso quando parado.



A photograph of a pile driver machine in operation. The machine is tall and yellow, with a long vertical shaft. It is positioned on a construction site with a clear blue sky in the background.

---

---

---

---

---


---

---

---

**TUBULÃO**

1. Encamisamento.
2. Sondagem após **3 m** de profundidade.
3. **0,90 m** de diâmetro.
4. Deve ser possível controlar a água no interior.
5. Ambiente confinado
6. Um por vez...



A photograph showing a grey metal tubulão (shank) being drilled into the ground. The shank is vertical and has a yellow cap at the top. The ground is dark brown soil.

**NR-33**  
**15 m**

---

---

---

---

---


---

---

---

**DESMONTE DE ROCHA**

1. Elaboração de plano de fogo.
2. Proteção da área exposta a partículas.
3. Aviso por sirene.
4. Explosivos não utilizados voltam ao depósito...



658234 | Pixabay

---

---

---

---

---

---

---

---

**CARPINTARIA E ARMAÇÃO**



658234 | Pixabay

---

---

---

---


---

---

---

---

**LOCAIS COM PISO RESISTENTE**



658234 | Pixabay

---

---

---

---

---

---

---

---

652294 | Pivoboy

COBERTURA CONTRA INTEMPÉRIES  
LOCAIS COM PISO RESISTENTE

---

---

---

---

---

---

---

---

652294 | Pivoboy

LÂMPADA PROTEGIDA  
COBERTURA CONTRA INTEMPÉRIES  
LOCAIS COM PISO RESISTENTE

---

---

---

---

---

---

---

---

652294 | Pivoboy

ISOLAR ÁREA DE CIRCULAÇÃO  
LÂMPADA PROTEGIDA  
COBERTURA CONTRA INTEMPÉRIES  
LOCAIS COM PISO RESISTENTE

---

---

---

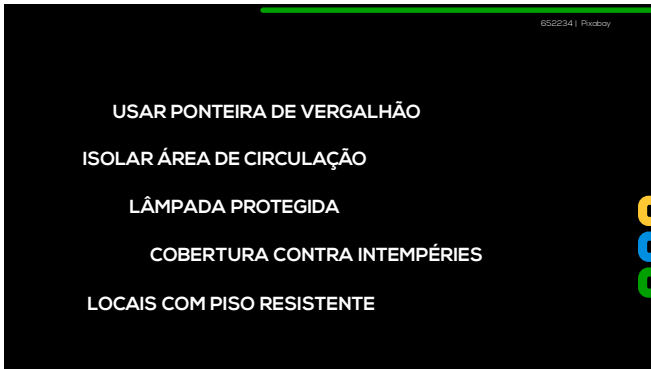
---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

**ESTRUTURAS METÁLICAS**

---

---


---

---

---

---

---

WoodSecura | 18/06/2022

**SPIQ no PGR**      **Recipiente**

---

---


---

---

---

---

---

**TRABALHO A QUENTE**

---

---

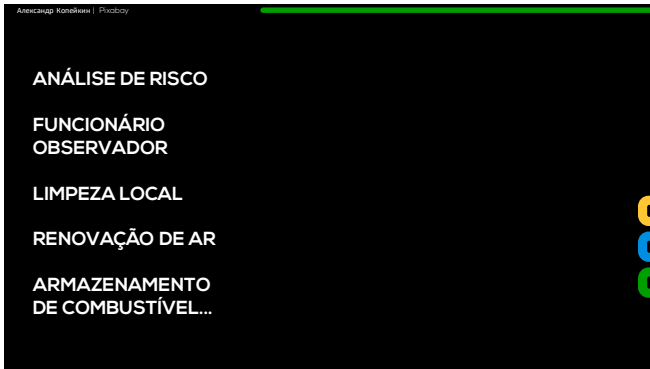
---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

**TELHADOS E  
COBERTURAS**

---

---

---

---

---

---

---



---

---



---

---

---

---

---

**NA PRÓXIMA  
AULA** 

---

---

---

---

---

---

---