

MEMORIAL DE CALCULO

OBRA: REFORMA E ADEQUAÇÃO DA CAMARA MUNICIPAL DE GENERAL SALGADO

PROPRIETÁRIO: Camara Municipal de General Salgado

LOCAL: Avenida João Garcia, nº941, General Salgado-SP.

1-SERVIÇOS PRELIMINARES:

- 1.1: 03.02.040: $(2,00 \times 2,10 = 4,20 \text{m}^2) \times 0,15 \text{CM} = 0,63 \text{M}^3$
- 1.2: 03.03.040: $6,00 \times 1,00 = 6,00 \text{M}^2$
- 1.3: 03.01.020: $47,43 \text{m}^2 \times 0,06 \text{cm} = 2,84 \text{m}^3$
- 1.4: 04.02.140: $3,50 \text{h} \times 1,00 \times 1,20 = 4,20 \text{m}^3 \times 120 \text{kg} = 504,00 \text{kg}$
- 1.5: 04.04.030: $1,16 + 2,51 = 3,67 \text{ml}$
- 1.6: 04.09.020: $2,00 \times 1,00 = 2,00 \text{m}^2 + 0,80 \times 2,10 = 1,68 \text{M}^2$ TOTAL: 3,68M2
- 1.7: 04.08.020: 01 unidade
- 1.8: 04.08.060: $2,10 + 2,10 + 0,80 = 5,00 \text{ml}$
- 1.9: 08.02.050: $76,68 \text{m}^2 \times 3,00 \text{h} \times 1,50 = 345,06 \text{m}^3$

2-CONSTRUÇÃO DE GARAGEM/COZINHA/LAVANDERIA:

- 2.1: 06.02.020: viga baldrame viga baldrame: $(6,82 + 15,15 + 3,37 + 8,47 + 6,72 + 0,30 = 40,83 \text{ml} \times 0,15 \times 0,25 \text{cm} = 1,53 \text{m}^3$
- 2.2: 12.01.021: 12 brocas x 3,00 m = 36,00ml
- 2.3: 10.01.040: $1,53 \text{m}^3 \times 100 \text{kg/m}^3 = 153,00 \text{kg}$
- 2.4: 11.03.090: viga baldrame 1,53M3
- 2.5: 11.16.040: 1,53M3
- 2.6: 14.01.020: $40,83 \text{ml} \times 0,20 \text{cm} \times 0,15 \text{cm} = 1,22 \text{m}^3$
- 2.7: 32.16.010: $40,83 \text{ml} \times (0,20 + 0,20 + 0,15 = 0,55 \text{cm}) = 22,45 \text{m}^2$

SUPRAESTRUTURA

- 2.8: 09.01.030: 12 colunas x $3,00 \times 0,50 = 18,00 \text{m}^2 + (\text{viga respaldo } 40,83 \text{ML} \times 0,50 = 20,41 \text{m}^2)$
TOTAL: $38,41 \text{M}^2$ (7 pilares para platibanda: $7,00 \text{unx } 0,15 + 0,15 \times 1,50 \text{h} = 0,45 \text{m}^2 = 3,15 \text{m}^2$)
 $= 41,56 \text{m}^2$
- 2.9: 10.01.040: 12 colunas de $0,15 \times 0,25 \times 3 \text{m}$ altura = $1,35 \text{m}^3 + (\text{viga respaldo } 40,83 \text{ml} - 6,50 = 34,32 \text{ml} \times 0,15 \times 0,25 = 1,28 \text{m}^3) + (6,50 \times 0,15 \times 0,40 = 0,39 \text{m}^3) + (07 \text{ pilares platibanda } 0,15 \times 0,15 \times 1,50 = 0,03 \text{m}^3 = 0,23 \text{m}^3)$ TOTAL: $3,25 \text{M}^3 \times 100,00 \text{KG/M}^3 = 325,00 \text{KG}$
- 2.10: 11.03.090: 12 colunas de $0,15 \times 0,25 \times 3 \text{m}$ altura = $1,35 \text{m}^3$ (viga respaldo $32,34 \text{ml} - 6,50 = 25,84 \text{ml} \times 0,15 \times 0,25 = 0,96 \text{m}^3$) + $(6,50 \times 0,15 \times 0,40 = 0,39 \text{m}^3) +) + (07 \text{ pilares platibanda } 0,15 \times 0,15 \times 1,50 = 0,03 \text{m}^3 = 0,21 \text{m}^3)$ TOTAL: $3,04 \text{M}^3$
- 2.11: 11.16.060: $3,04 \text{m}^3$

2.12: 14.04.210: 40,83ML X 3,00H=122,49M2)+(mais platibanda 1,50hx(8,40+6,85+3,40=18,65ml)=27,97m2) total: 150,46m2
 2.13: 13.01.130: (6,85X7,05=48,29M2) + (3,40X8,35=28,39M2) = 76,68M2
 2.14: 14.20.010: 5,38+3,30+1,22+3,25 +3,05 = 16,20ml x 0,15x0,15 = 0,36m3
 2.15: 17.01.040: 76,68M2 X 0,05CM = 3,83M3
 2.16: 17.01.020: 76,68M2 X 0,02CM = 1,53M3
 2.17: 18.08.090: (3,30x6,72=22,17m2)+(3,07X15,15= 46,51m2) total: 68,68m2 +10% = 75,54m2)
 (REVESTIMENTO PAREDE COZINHA: 3,30X3,00H = 9,90M2) TOTAL: 85,44M2
 2.18: 18.08.100: 15,15+8,47+3,20+6,87+3,30+3,30= = 40,29MLml
 2.19: 17.02.020: (150,46M2 X 2 LADOS = 300,92M2)+(LAJE: 76,68M2) TOTAL: 377,60M2
 2.20: 17.02.120: 377,60M2
 2.21: 17.02.220: 377,60M2
 2.22: 46.01.020: 2,00+4,00+6,00+6,00 = 18,00ML
 2.23: 46.01.050: 3,00+1,50+3,00+1,50+6,00 = 15,00ML
 2.24: 44.03.315: 02 UM
 2.25: 44.06.310: 01 UM
 2.26: 44.20.110: 01UN
 2.27: 44.20.010: 01UN
 2.28: 23.08.040: 1,8+0,60+0,60 = 3,00mlx 0,75h = 2,25m2
 2.29: 44.01.360: 01UN
 2.30:44.02.062: (pia cozinha1,00x0,60 = 1,08m2)+(balcão: 0,40x4,00 = 1,60m2): 2,68m2

3-ALVENARIA E OUTROS ELEMENTOS:

3.1: 14.04.210: (FECHAMENTO BALCÃO1,16+2,51 x 2,00h = 7,34m2)+(2,06X3,00=6,18M2)+(FECHAMENTO PORTA PAVSUPERIOR 0,80x2,10=1,68m2)
 TOTAL: 15,20M2
 3.2: 17.02.220: 15,20M2 X 2 LADOS = 30,40M2
 3.3: 17.02.120: 30,40M2
 3.4: 17.02.220: 30,40M2

4- REFORMA DOS BANHEIROS- PAVIMENTO SUPERIOR:

4.1: 03.04.020: 2,15+2,15+1,25+1,25=6,80ml x 2,95h=20,06m2+2,68m2 chao = 22,74m2 x 2 um = 45,48m2
 4.2: 02UN
 4.3: 04.11.080: 02UN
 4.4: 46.01.020: 3,00+3,00 = 6,00ML
 4.5: 46.01.050: 2,00+2,50 = 4,50ML
 4.6: 17.02.020: 2,15+2,15+1,25+1,25=6,80ml x 2,95h=20,06m2
 4.7: 17.02.120: 20,06M2
 4.8: 17.01.020: 20,06M2
 4.9: 18.08.090: 2,15+2,15+1,25+1,25=6,80ml x 2,95h=20,06m2+2,68m2 chao = 22,74m2 x 2 um = 45,48m2
 4.10: 44.01.050: 02UN

4.11: 44.02.062: $0,90 \times 0,40 = 0,36\text{m}^2 + \text{testeira } 0,15 \times 0,1,30 = 0,19\text{m}^2 = 0,55\text{m}^2 \times 02\text{un} = 1,10\text{m}^2$
4.12: 44.01.270: 02UN
4.13: 44.03.315: 02UN
4.14: 44.20.120: 02UN
4.15: 44.20.100: 02UN
4.16: 44.20.200: 02UN
4.17: 49.04.010: 02UN
4.18: 44.03.180: 02 un (um em cada banheiro)
4.19: 44.03.130: 02un (um em cada banheiro)

5- ELEMENTOS METÁLICOS COMPONENTES ESPECIAIS:

5.1: 23.09.050: 01UN
5.2: 28.01.040: 01UN
5.3: 24.01.030: $3,00 \times 2,40 = 7,20\text{m}^2$
5.4: 24.02.054: $2,00 \times 2,10 = 4,20\text{m}^2$
5.5: 23.20.040: 01un.

6- COBERTURA GARAGEM/COZINHA:

6.1: 04.03.020: $47,43\text{m}^2 + 10\% \text{ GRAU INCLINAÇÃO} = 52,17\text{M}^2$
6.2: 04.02.070: 52,17M2 TODA A COBERTURA QUE SERA CONSTRUIDA
6.3: 15.01.140: 76,68m2
6.4: 16.12.020: $76,68 + 10\% = 84,34\text{M}^2$
6.5: Rufo: $15,25 + 3,37 + 6,82 + 3,30 + 8,47 + 15,25 \text{CALHA} = 59,18\text{ML}$
6.6: 46.04.030: $3 + 9 = 13,00\text{ml}$

7- INSTALAÇÕES ELETRICAS:

7.1: 38.13.010: 200,00ML
7.2: 37.03.200: 01UN
7.3: 37.13.600: 05UN
7.4: 37.13.660: 03UN
7.5: 39.03.170: 200,00 ML
7.6: 39.03.160: 130,00 ML
7.7: 40.04.450: 10UN
7.8: 41.31.070: 13UN
7.9: 40.05.020: 02UN
7.10: 40.05.080: 02UN
7.11: 40.05.060: 01un

8- VIDROS E SOLEIRA:

8.1: 19.01.062: 2,00ML
8.2: 26.01.080: $1,50 \times 0,60 \times 03\text{un} = 2,70\text{m}^2 + 10\% \text{ transpase} = 2,97\text{m}^2$
8.3: 29.01.030: $1,20 \times 03\text{un} = 3,60\text{kg}$

9- PINTURA:

9.1: 33.10.030: PINTURA INTERNA PINTURA INTERNA: PINTURA INTERNA:(sala nova: $3,05+3,05+4,05+4,05=14,20\text{m}\times 3,00\text{h}=42,60\text{m}^2+12,35\text{m}^2$ laje= $54,95\text{m}^2$)+(sala presidente: $4,17+4,17+4,05+4,05=16,44\text{m}\times 3,00\text{h}=49,32\text{m}^2+16,88\text{m}^2$ laje= $66,20\text{m}^2$)+(lavanderia: laje $2,50\times 4,05=10,12\text{m}^2$)+(cozinha nova: $6,50+6,50+3,30=16,30\text{m}\times 3,00\text{h}=48,90\text{m}^2+21,45\text{m}^2$ laje = $70,35\text{m}^2$)+(garagem: $15,15+15,15+3,30=33,60\text{m}\times 3\text{h}= 100,80\text{m}^2+49,54\text{m}^2$ laje= $150,34\text{m}^2$) total: $351,96\text{m}^2$

9.2: 33.02.060: sala nova $54,95$ +cozinha nova $70,35\text{m}^2$ +garagem: $150,34\text{m}^2 = 275,64\text{m}^2$

9.3:32.12.011: $0,90\times 2,10=1,89\text{m}\times 2 =3,78\text{m}^2 \times 03\text{un}=11,34\text{m}^2$

9.4: 33.11.050: $2,00\times 2,10 = 4,20\text{m}\times 2$ lados = $8,40\text{m}^2+ 6,90\times 2\text{lados}=13,80\text{m}^2$ total: $22,20\text{m}^2$

9.5: 03.03.040: $8,00\text{m}\times 2,00\text{h} = 16,00\text{m}^2$

9.6: 17.02.020: $16,00\text{M}^2$

9.7: 17.02.220: $16,00\text{M}^2$

9.8: 32.16.010: $16,00\text{M}^2$

9.9: 33.02.060: $16,00\text{M}^2$

9.10: 33.10.030: $16,00\times 2,60\text{h} = 41,60\text{m}^2$

10- SERVIÇOS COMPLEMENTARES:

10.1: 55.01.020: $76,68\text{M}^2$

General Salgado, 04 de SETEMBRO de 2025.

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