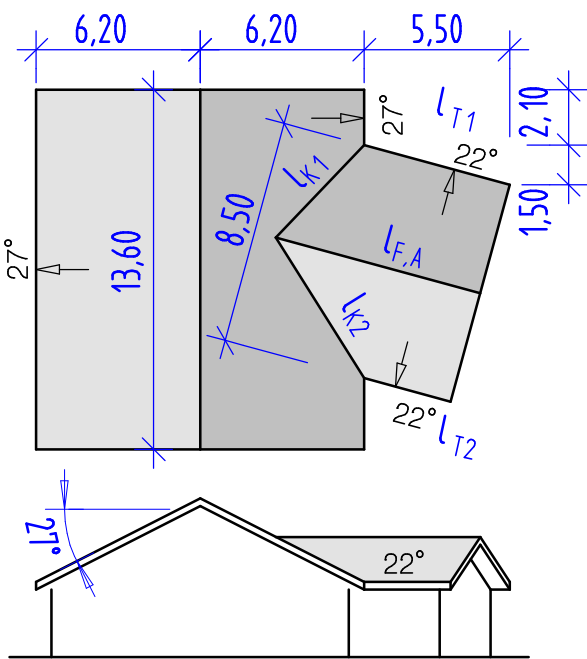


31) Satteldach mit schrägem Anbau, Dachneigung 27° und 22°. Ges.: First-, Kehlen- und Traufenlängen; Dachflächen.



Normalprofile:

$$g_H = 6,20\text{m} \quad g_A = 4,25\text{m}$$

$$h_F = 6,20 * \tan 27^\circ = \underline{\underline{3,159\text{m}}}$$

$$h_{F,A} = 4,25 * \tan 22^\circ = \underline{\underline{1,717\text{m}}}$$

Hauschräge:

$$\alpha_{sch} = \tan^{-1} \frac{1,50}{5,50} = \underline{\underline{15,255^\circ}}$$

$$l_{T1} = \frac{5,50}{\cos 15,255^\circ} = \underline{\underline{5,701\text{m}}}$$

$$l_{T2} = 5,701 - 8,50 * \tan 15,255^\circ = \underline{\underline{3,383\text{m}}}$$

$$g_{K,H} = \frac{1,717}{\tan 27^\circ} = \underline{\underline{3,370\text{m}}} \quad l_{F,A,2} = \frac{5,701 + 3,383}{2} = \underline{\underline{4,542\text{m}}}$$

$$l_{F,A,1} = \frac{3,370}{\cos 15,255^\circ} = \underline{\underline{3,493\text{m}}} \quad l_{F,A} = 3,493 + 4,542 = \underline{\underline{8,035\text{m}}}$$

$$g_{A,sch} = \frac{4,25}{\cos 15,255^\circ} = \underline{\underline{4,405\text{m}}}$$

$$y = 3,370 * \tan 15,255^\circ = \underline{\underline{0,919\text{m}}}$$

$$g_{K1} = \sqrt{3,37^2 + (4,405 - 0,919)^2} = \underline{\underline{4,849\text{m}}}$$

$$l_{K1} = \sqrt{4,849^2 + 1,717^2} = \underline{\underline{5,144\text{m}}}$$

$$\gamma_{H,1} = \tan^{-1} \frac{3,370}{4,405 - 0,919} = \underline{\underline{44,030^\circ}}$$

$$\gamma_{A,1} = 90^\circ + 15,255^\circ - 44,030^\circ = \underline{\underline{61,225^\circ}}$$

$$\gamma_{H,2} = \tan^{-1} \frac{3,370}{4,405 + 0,919} = \underline{\underline{32,333^\circ}}$$

$$\gamma_{A,2} = 90^\circ - 15,255^\circ - 32,333^\circ = \underline{\underline{42,412^\circ}}$$

$$g_{K2} = \sqrt{3,37^2 + (4,405 + 0,919)^2} = \underline{\underline{6,301\text{m}}}$$

$$l_{K2} = \sqrt{6,301^2 + 1,717^2} = \underline{\underline{6,531\text{m}}}$$

Traufenlängen:

$$l_T = 13,60 * 2 - 4,405 * 2 + 5,701 + 3,383 = \underline{\underline{27,474\text{m}}}$$

Dachflächen:

$$A_{Gru,H} = 13,60 * 12,40 - 3,37 * 4,405 = \underline{\underline{153,80\text{m}^2}}$$

$$A_{Gru,A} = (4,542 * 4,25) * 2 + 3,493 * 4,25 = \underline{\underline{53,45\text{m}^2}}$$

$$A_{sch} = \frac{153,80}{\cos 27^\circ} + \frac{53,45}{\cos 22^\circ} = 172,61 + 57,65 = \underline{\underline{230,26\text{m}^2}}$$