Erratum

Chapter 4 - Earth and water pressure | 26

Chapter 4.9.15. Area loads

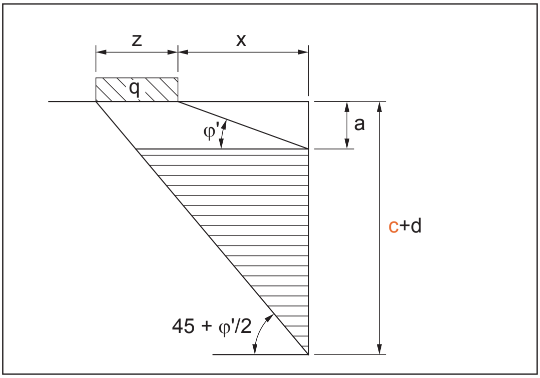

Fig. 4.3. Force distribution area lords.

Note: Corrected value in red.

Erratum

Chapter 5 - Design of steel sheetpile structures | 22

Chapter 5.8.3. Surcharge loads

5.8.3. Surcharge loads

Assessment of the relevant surcharge loading to be taken by the wall must consider the influence of nearby buildings, stockpiles, plant movements, etc. Particular attention should be given to repeated loading, e.g. from crane tracks behind quay walls, where the earth pressures induced against the wall may increase with each application of load.

It is common in the UK to design embedded retaining walls to withstand a minimum surcharge acting behind the wall. For example, a blanket surcharge of 10 kPa has traditionally been applied to walls retaining less than 3 m of soil [xii and xiii]. Highway structures have traditionally been designed for a blanket surcharge of 10-20 kPa, representing "HA" through to the heaviest "HB" loading [xiv]; and railways for a blanket surcharge of 30-50 kPa [xv]. However, Eurocode 7 - Part 1 [v] does not require a minimum surcharge to be assumed in design. Therefore earth pressures should be calculated in accordance with the methods described in Chapter 4 and surcharges applied where relevant with the appropriate partial factor for the action. Chapter 4.9.11. describes the methods to calculate various types of surcharge configurations.

Note: Corrected value in red.

Erratum

Chapter 6 - Axially loaded steel piles | 8

Chapter 6.3.2. Design limit states

Parameter			Partial factor	Combination		
				1	2	
Actions	Permanent	Unfavourable	γ_G	1.35	1.00	
		Favourable	$\gamma_{G,fav}$	1.00	1.00	
	Variable	Unfavourable	γ_Q	1.50	1.30	
		Favourable	$\gamma_{Q,fav}$	0	0	
Material properties[1)]					M1	M2
	Effective shearing resistance		γ_φ	1.00	1.00	1.25
	Effective cohesion		γ_c	1.00	1.00	1.25
	Undrained shear strength		γ_{cu}	1.00	1.00	1.40
	Unconfined compressive strength		γ_{qu}	1.00	1.00	1.40
	Weight density		γ_γ	1.00	1.00	1.00
Resistance[2)]					w/o	w
	Base resistance		γ_b	1.00	1.70	1.50
	Shaft resistance in compression		γ_s	1.00	1.50	1.30
	Total resistance		γ_t	1.00	1.70	1.50
	Shaft resistance in tension		$\gamma_{s,t}$	1.00	2.00	1.70

Table 6.1. Partial factors for design of pile foundations for ultimate limit state GEO in persistent and transient design situations.

[1)] In combination 2, set M1 is used for calculating resistances of piles or anchors and set M2 for calculating unfavourable actions on piles owing e.g. to negative skin friction or transverse loading.

[2)] Without explicit verification of SLS, the larger resistance factors apply (column w/o); with explicit verification, the smaller values apply (column w).

Note: Corrected value in red.

Erratum

Chapter 7 - Design of anchorages and tieback systems | 27

Chapter 7.13.4. Effects of actions - Chapter 7.13.5. Resistance

7.13.4. Effects of actions

Active thrust from ground self-weight will be treated as a favourable action, according to the “single-source principle”, to match passive thrust.

Active thrust on anchor restraint:

$$P_{a,d} = K_{ah} \times \left[\left(\gamma_{G,fav} \times \sigma_{v,k} \times \frac{D'}{2} \right) + \left(\gamma_Q \times q_{Qk} \times D' \right) \right]$$

$$= 55.35 \ \frac{\text{kN}}{\text{m}}$$

Design force to be provided to wall: $F_d = 125$ kN/m.

Total horizontal thrust:

$H_{Ed} = F_d + P_{a,d} = 180.35$ kN/m.

7.13.5. Resistance

Partial factor for Design Approach 1, Combination 2 from Set R1:

$\gamma_{R,e} = 1.00$

Passive earth resistance coefficient:

$K_{ph} = 2.622$

Passive thrust will be treated as a favourable action, according to the “single-source principle”.

Passive thrust on anchor restraint:

$$P_{p,d} = K_{ph} \times \frac{\left(\gamma_{G,fav} \times \sigma_{v,k} \times \frac{D'}{2} \right)}{\gamma_{Re}} = 266.41 \ \frac{\text{kN}}{\text{m}}$$

Total horizontal resistance:

$H_{Rd} = P_{p,d} = 266.41$ kN/m

Note: Corrected value in red.

Erratum

Chapter 12 - Worked example | 12

Chapter 12.2.6. Earth pressure diagram

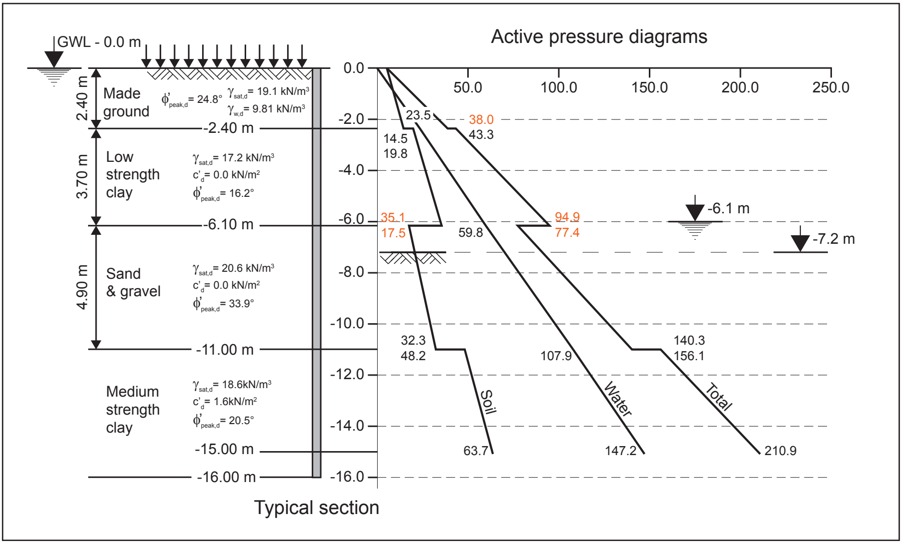

Fig. 12.3. Example of 2 dimensional sketch of active pressure components.

Note: Corrected value in red.