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Thesis title

some subtitle

Master's thesis in the Master's Programme Structural Engineering and Building Technology

GUDJÓN ÓLAFUR GUDJÓNSSON
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Division of Structural Engineering
Concrete Structures
CHALMERS UNIVERSITY OF TECHNOLOGY
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City Tunnel Diaphragm Walls, TEMP pic

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ABSTRACT

Here goes the text for the Abstract

Keywords: Permanent Diaphragm Walls, Diaphragm Walls, Functional Requirements

CONTENTS

PREFACE

Here goes the text for the Preface.

NOMENCLATURE

In the notation table, if included, all variables occurring in the report (text, equations, figures or tables) are listed alphabetically. The variables should appear in the same format as later on in the report. Therefore, it may be wise to use the equation editor to write them, see also Section 1.5. In case of many variables, it is preferably to separate the table in "Roman upper case letters", "Roman lower case letters", "Greek upper case letters", etc. Use the style "Notations" for lines with the explanations of the variables, but the style "Normal" for the table headings (and for one blank line before a new heading).

Roman upper case letters

A_{bc}	Variable notation for something
B_{cd}	Variable notation for something

1 Introduction

This is a template!

1.1 Background

Write about the thesis background here.

1.2 Problem description

This is where you describe you problem.

1.3 General aim

By now you know what to do here :)

1.4 Method / Outline

...

1.5 Objectives

...

1.6 References

Your reference data should be contained in `referencedata.bib`. Open the file using a text editor and look at its content. Your own references need to have the same structure! You cite a reference in this way: Harryson (2014) and Alén et al. (2006).

1.7 Cross-references

Cross-references within your own thesis are taken care of by the package `cleverref`. Making a cross-reference to a figure is done in this way: Figure 4.1 (the name in the curly brackets could be anything).

1.8 Equations

Here is how to typeset equations in LaTeX.

$$\sigma = E\varepsilon \tag{1.1}$$

and here is how to align several equations using the & symbol:

$$A = Bx \tag{1.2}$$

$$c + D + \frac{2}{\phi} = \sqrt{B} \tag{1.3}$$

and here is how to suppress numbering of equations

$$\sigma = E\varepsilon$$

and this is how to cross-reference to an equation: Equation (1.1).

1.8.1 In-line math

Use the $-symbol to typeset in-line math like so: $\sigma = E\varepsilon$. This important because in-line math should be italicized. For example, if you want to write the symbol for Young's modulus, it needs to be done in this way: E, not: E. If the letter "E" is italicized, then it is a physical quantity, namely Young's modulus, whereas a normal "E" is just an E.

2 Units

Units are typeset using the package `siunitx`. Most numerical values you will typeset have units, except e.g. strain. Here are two examples of badly typeset units:

$$\sigma = 100mpa$$
$$\sigma = 100\ Mpa$$

The correct way looks like this:

$$\sigma = 100\,\mathrm{MPa}$$

The unit should *not* be italicized and should have a correct spacing between its numerical value. This is automatically taken care of by the package `siunitx`. Common units are typeset in this way: $10\,\mathrm{m}^2$, $10 \times 10^{-5}\,\mathrm{m}^3$, $10\,\mathrm{kN}$ and $10\,\mathrm{g\,m^{-2}\,s^{-1}}$. The number goes in the first pair of curly brackets, and the unit in the second pair. Typesetting units *without* numerical value is done in this way: kN.

3 Section headings

Here is how you subdivide your thesis into different levels:

3.1 Section

This is a Section

3.1.1 Subsection

This is a Subsection.

Subsubsection

This is a Subsubsection. Your should avoid levels below this one.

4 Graphics

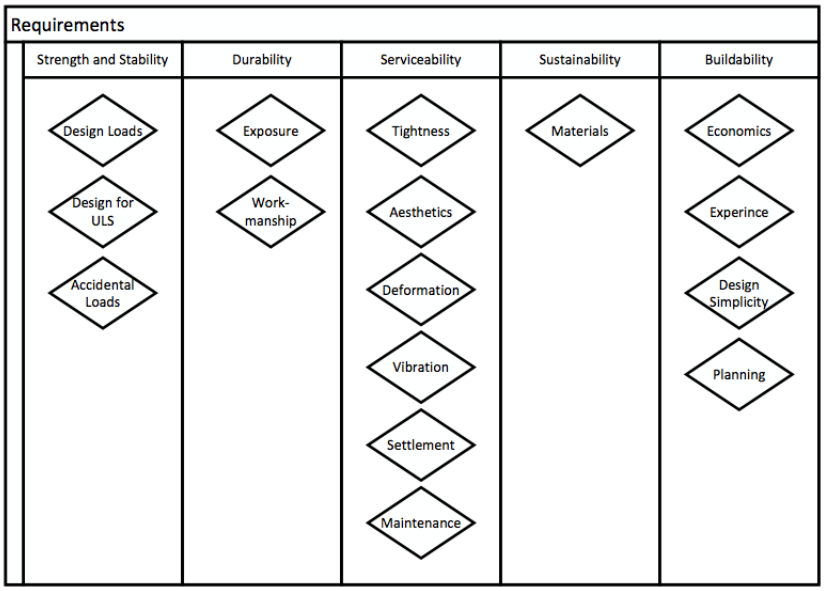
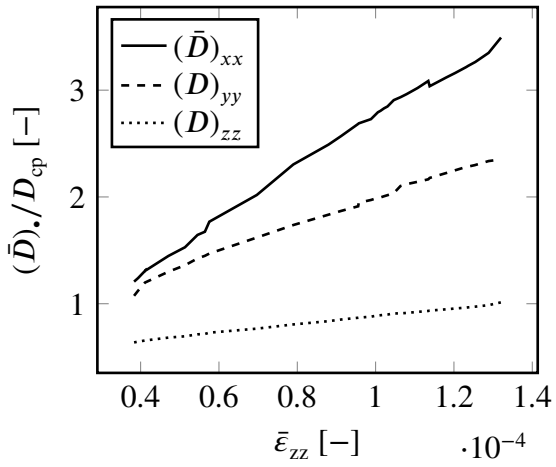


Figure 4.1: Functional requirements for Buildability.

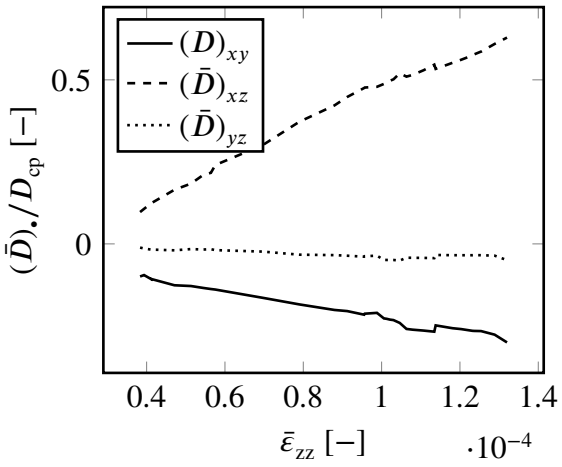
bla bla bla....

4.1 Plots

Plots are preferably done using the package `pgfplots`. Below is an example given. The example also show how to put figures side-by-side in your document using the `\subfloat` command. Open `data.txt` in a text editor and have a look at its structure. The LaTeX document reads the data from the text file and produces a plot. Axes are automatically scaled depending on the data range given in the text file.



(a) Diagonal components of $\bar{D}$.



(b) Off-diagonal components of $\bar{D}$.

Figure 4.2: Components of the macroscale diffusivity tensor, $\bar{D}$, as a function of macroscale strain. Numerical values are normalized with respect to D_{cp}.

You can cross-reference to each of the figures in this way: Figure 4.2a and Figure 4.2b. You can also plot analytical functions `pgfplots` as shown in Figure 4.3 below.

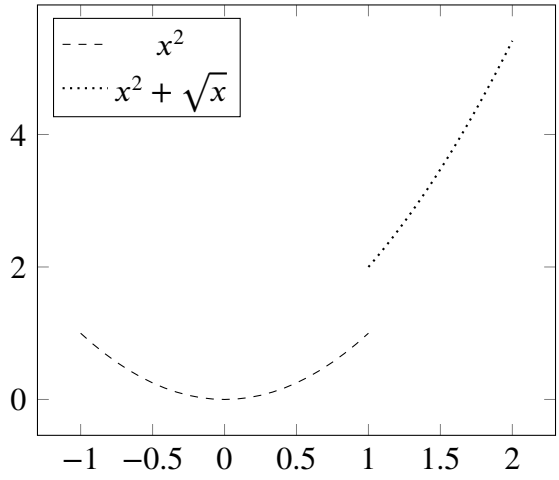


Figure 4.3: Examples of analytical functions.

Bibliography

Alén, C., A. Lindvall, M. Johansson, J. Magnusson, and C. Norén (2006). *Slitsmurar som Permanenta Konstruktioner, SBUF 11603, ("Diaphragm Walls as Permanent Construction")*. Tech. rep. SBUF (cit. on p. 1).

Harryson, P. (2014). *Interview on functional requirements for permanent diaphragm walls*. Trafikverket (cit. on p. 1).

A Your first Appendix

The contents of your appendicies go here.

B Your second Appendix

The contents of your appendicies go here.