R1 05 80 03 Technical Directive

Tata Steel EPLAN-Requirements

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Intended for the location IJmuiden

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Table of contents:

1. Purpose and validity

1.1. Purpose

This instruction is intended to:

- Ensuring a uniform approach in the use of EPLAN Tata Steel (IJmuiden), in such a manner that all drawings through means of standard procedures can be archived.
- To reduce compatibility problems.

In addition to these instructions, the General Drawing Instruction as specified in Technical Guideline R1058001 also apply.

1.2. Field of application

In addition to this regulation the general drawing Regulations apply as laid down in Technical Directive R1058001.

1.3. Validity

This regulation supersedes all previous versions, and is applicable for all new drawings of projects started after January 1, 2006.

1.4. Acceptance

Eplan projects should be set up in version 5.70.SP1 of Eplan.

Upon delivery no EPLAN errors may be present and Z13 must be used.

In the design of EPLAN projects it is necessary wherever possible to make use of generating (cross-references, wiring diagrams, cable lists, material lists of contents and group/location overviews).
This functionality should also be available for the delivered projects.
It is therefore important that the instructions, in particular for symbols, cable files and article files are adhered to.
When unpacking the Z13 files a check is made that the supplied symbol files are used. If this is not the case, and there is no indication of the symbols added, the delivery must be refused outright.

For the overview of the changes, it is important that change management is implemented in a consistent manner. Letters should be used during the design stage, and digits for the as-built delivery.

When creating new projects, the first thing to do is to create single line diagrams (cable block diagrams).
Shortly after the start of the project, these diagrams should be submitted for acceptance to check the EPLAN structure.
These diagrams should specify the scope of the project and the connections with external installations.

The stipulations and working methods as described in these instructions should be strictly adhered to, unless there is written agreement to deviate from specified points.

When the project is delivered, the prescribed stipulations will be checked. Any non-conformities must be corrected immediately by the contractor.

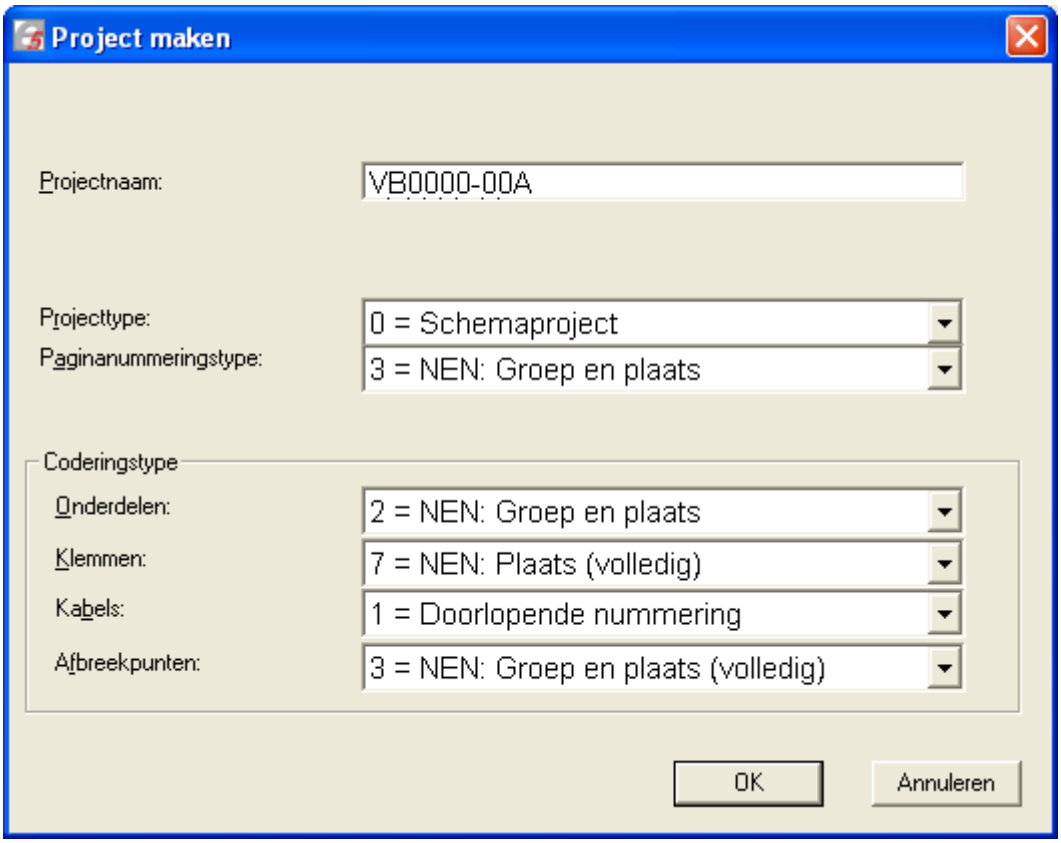
2. Creation of a project

2.1. Page numbering and coding

To be able to visualise the desired settings, a project VB0000-00A was created and print screens were added to this document.

When creating a new project, it is important that the project-specific database fields are defined correctly as in Figure 1 below:

Figure 1. Screen - Create project under Project selection



2.2. Parameters

The following Tata Steel standard should be used as the parameter file

- PAR.ppd

Refer to the appendix PAR.xls for the settings.

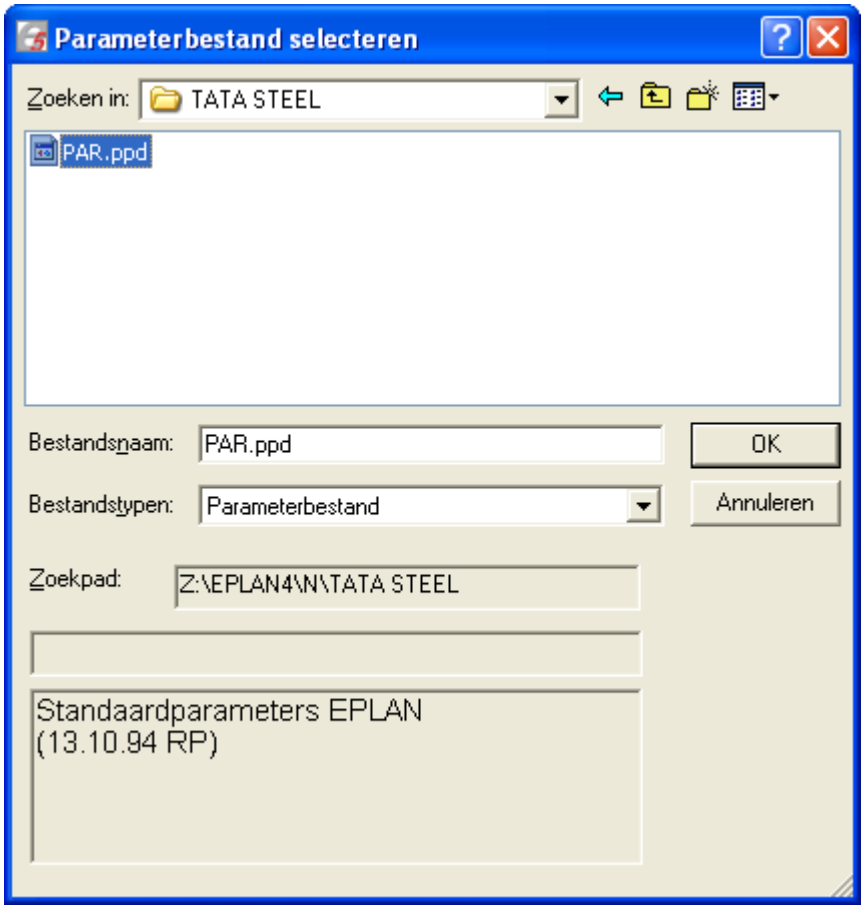


Figure 2. Screen - Parameter File Selection

2.3. Project

2.3.1. Directories

EPLAN projects should be created using the following directory structure:

\EPLAN4\P\TATA STEEL\	-	Project
\EPLAN4\N\ TATA STEEL \	-	Master details
\EPLAN4\M\ TATA STEEL \	-	Macros
\EPLAN4\L\ TATA STEEL \	-	Parts data
\EPLAN4\F\ TATA STEEL \	-	Print-, and Control forms

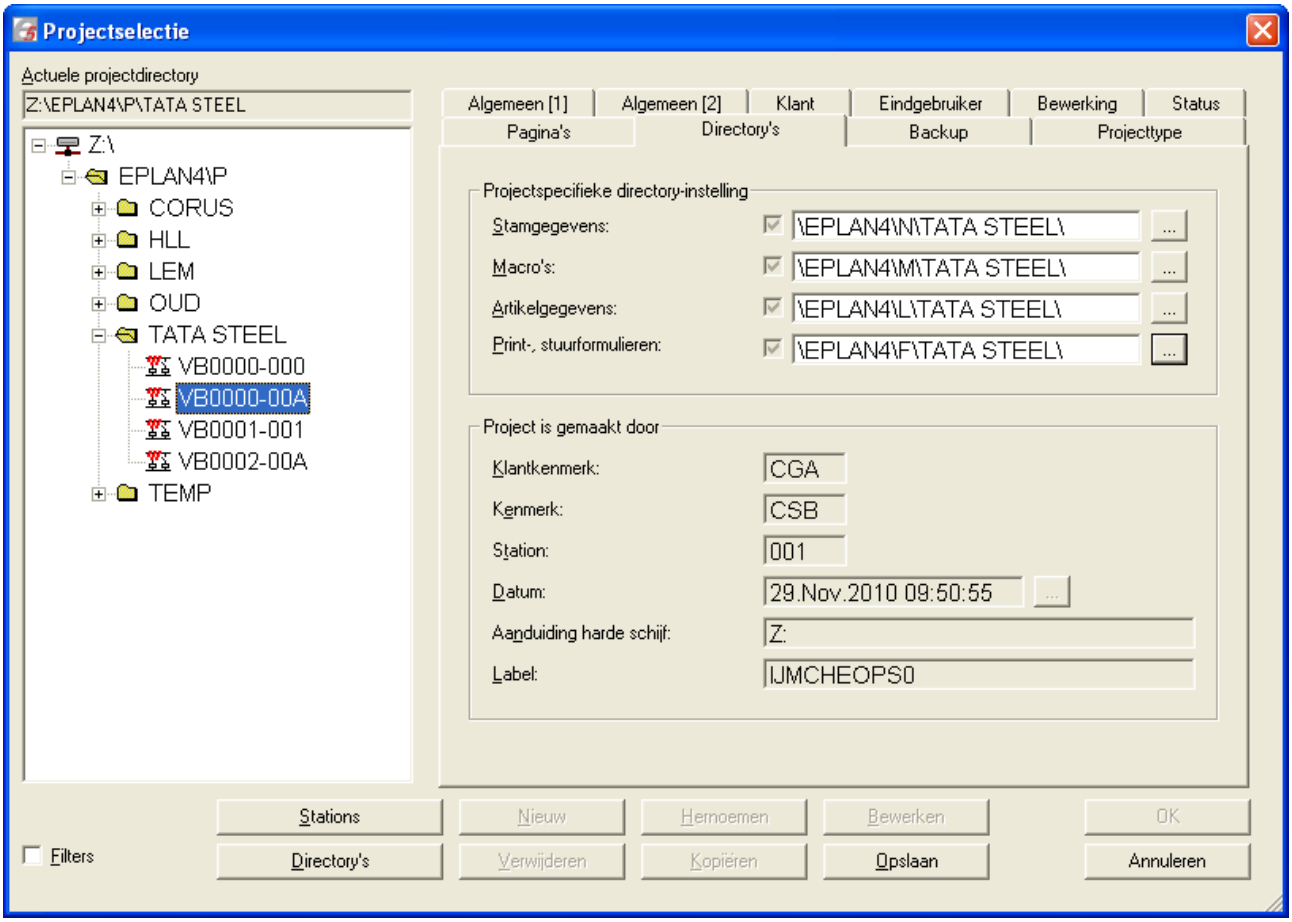


Figure 3. Screen section - Directories under Project selection

2.3.2. Project specific details

Project-specific details should be filled in the following tabs:

General [1] see Figure 4

- Drawing number: Tata Steel EPLAN DRAWING number (to be supplied by Tata Steel)
- Company: Name of Contractor

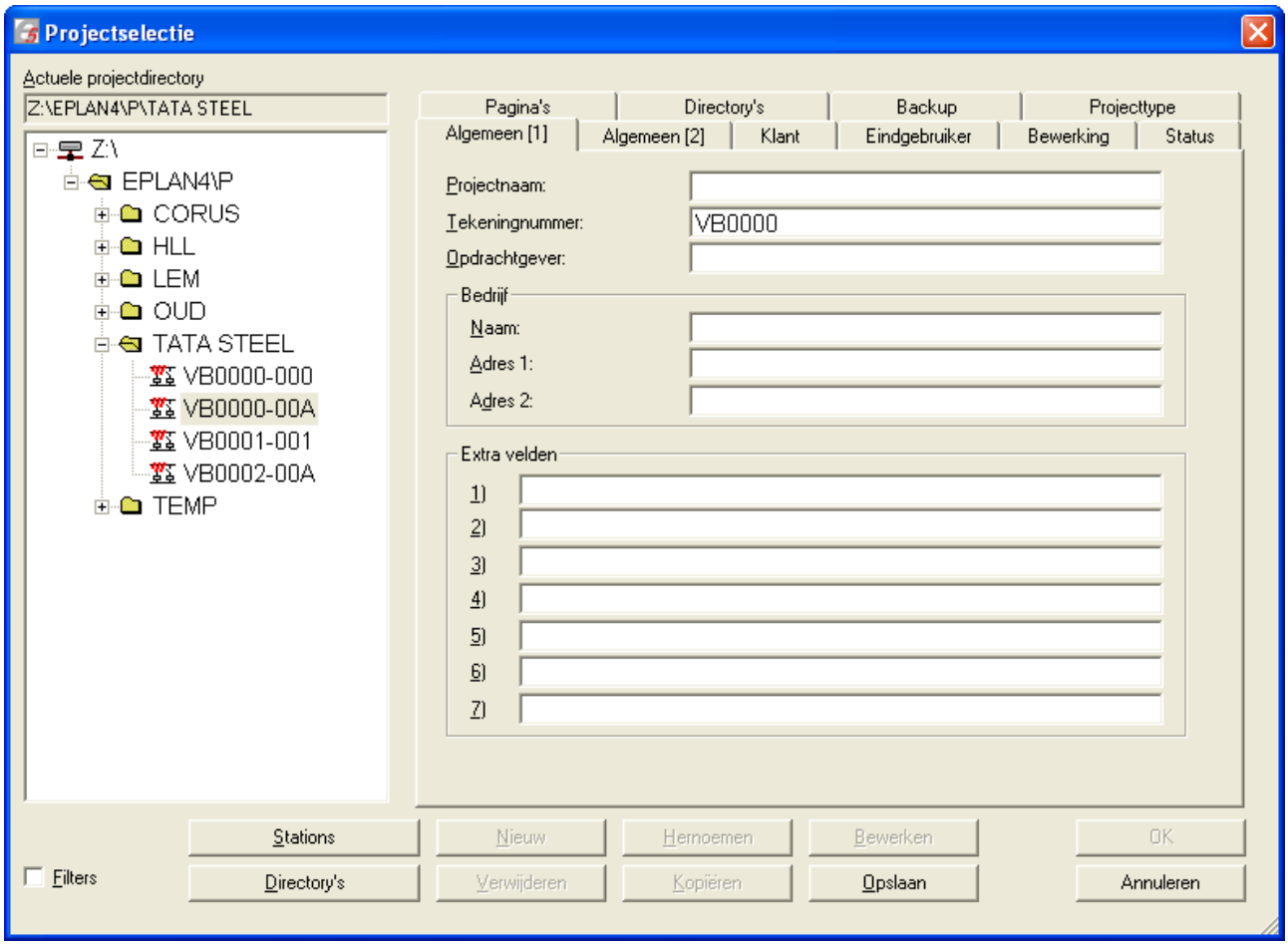


Figure 4. Tab - General [1] under Project selection

Editing see Figure 5

- Responsible for project: name of Tata Steel coordinator for Eplan
- Start: Date of As-built New Project

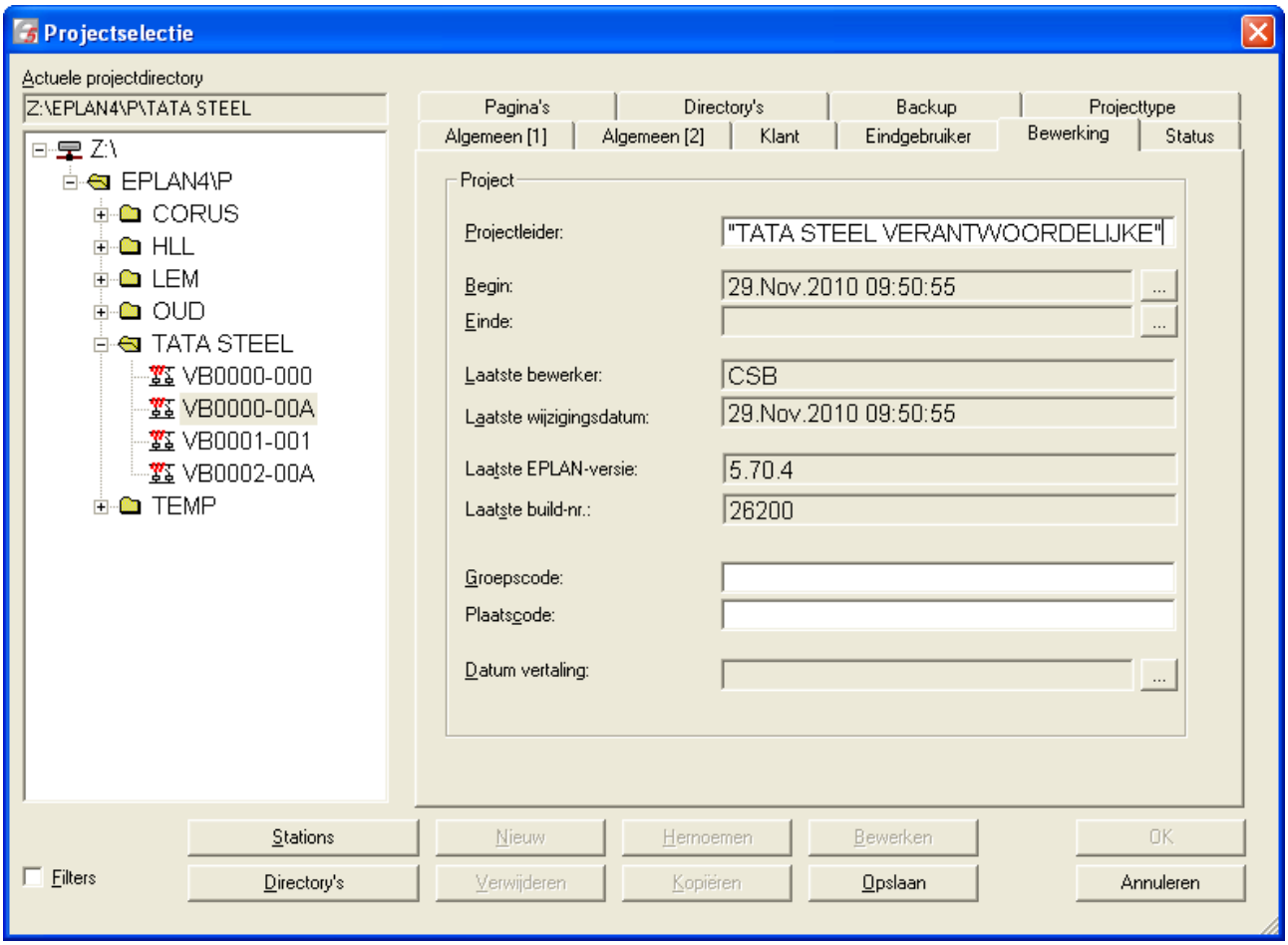


Figure 5. Tab - Edit under Project selection

End-user see Figure 6, this will be supplied by Tata Steel

- Abbreviation: Installation management

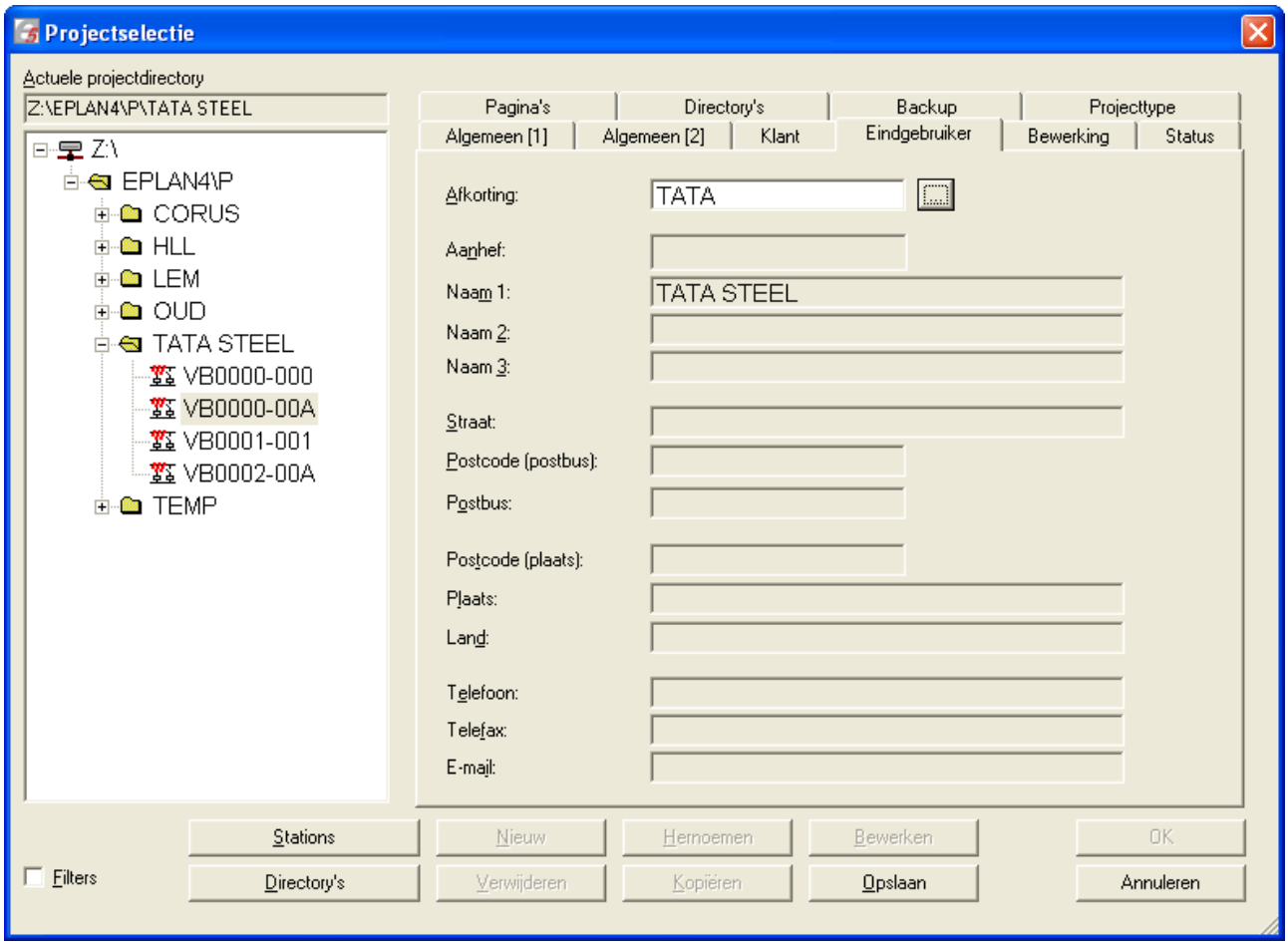


Figure 6. Tab - End-user under Project selection

3. Structure (group/ location code)

At the moment of project conception for page numbering the option, group/ location coding must be selected, as described in section 2.1 “Page numbering and coding”.
This makes it possible to create a structure as shown in figure 7.
In this structure we use:

- ‘=’ for group coding or function coding
- ‘+’ for location coding or cabinet coding

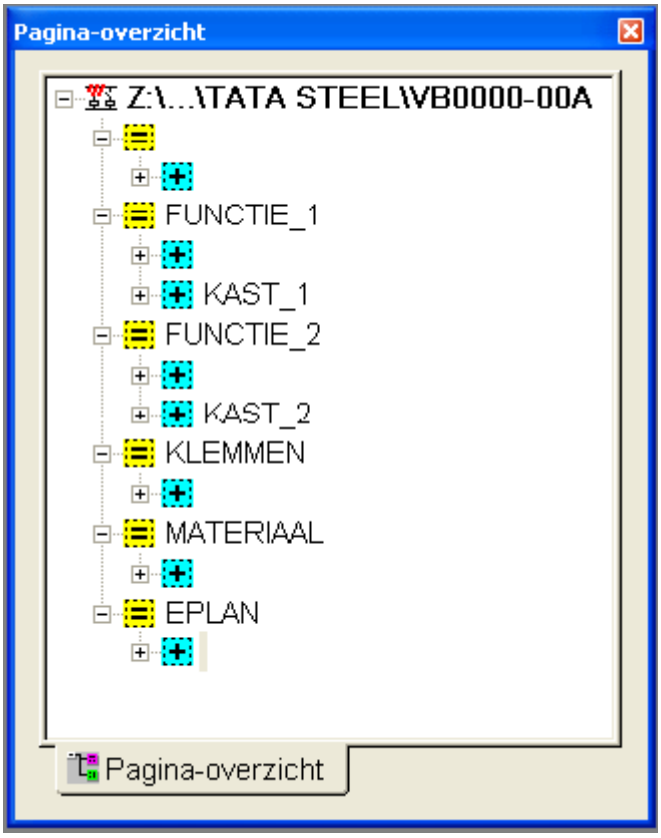


Figure 7. Structure per group and location

In every Eplan project, an ‘EPLAN’ function must be created in which Eplan-specific data must be drawn that must not appear on the printouts of the drawing (including the terminal strip name definitions and spare connection terminals).

The breakdown structure by function and location depends on a number of factors:

- the scope of the project (number of pages)
- the method of drawing (cabinet oriented or function-oriented)
- the structure in Tata Steel Drawings (complete drawing or circuit diagrams, wiring diagrams and material lists separately)

The choice of structure must be determined in consultation with the responsible Tata Steel coordinator.

The following requirements apply for a Tata Steel drawing number:

- the maximum number of pages is 400, and preferably less than 200
- the page numbering is unique and only numerical.
- no sub page numbers may be used
- for circuit diagrams, spare page numbers must be reserved for future additions.

The size of Eplan projects must in principle be limited to 1000 pages. For larger installations, the following options are available:

- connection diagrams, bills of material and cable lists, etc. must be generated to (a) separate Eplan project(s)
- subdivide (circuit) diagrams into multiple Eplan projects.

3.1. A single complete drawing

For projects with limited scope (a single control cabinet), a single complete drawing will normally be used. The structure will then be that shown in Figure 8.
The name of the control box is then the same as the location, in this example 'KAST_1'.

figure 8. Structure for a single complete drawing

3.2. Several complete drawings

If the project consists of several control cabinets (function/location codes) and/or multiple Tata Steel drawing numbers, an overview of the locations/ drawings is recorded using an all encompassing Tata Steel drawing “OVERKOEPELENDE TEKENING” (no function code and no location code). The name of the Eplan project is the same as the Tata Steel drawing number of the overall drawing.

figure 9. Structure for several complete drawings

To input the descriptions of the group and location codes, select the Group Location Editor in the Eplan main menu. The group codes and location codes are displayed for the project involved.
If separate Tata Steel drawing numbers are used, the description should **start** with this **Tata Steel drawing number** as shown in the figure below.

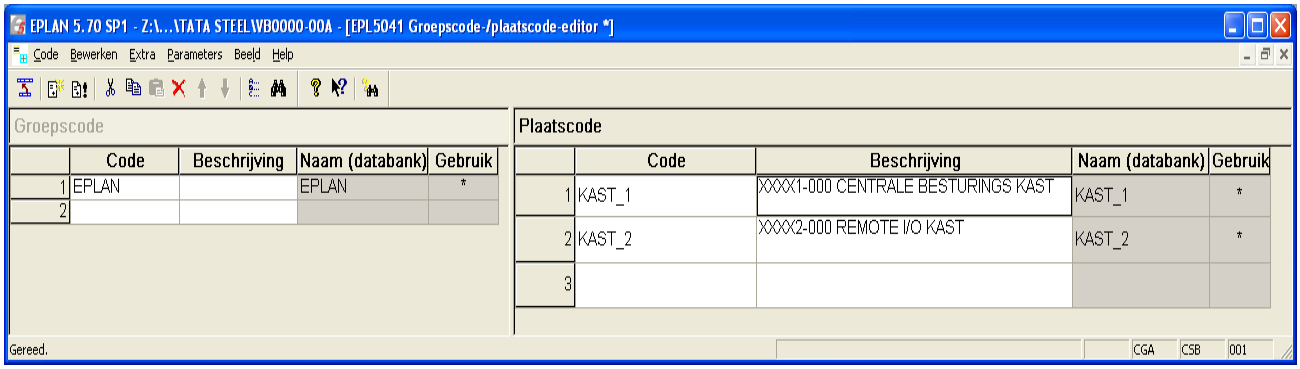


figure 10. Definition description of group codes and location codes

3.3. Other project formats

In consultation with the Tata Steel accountable and Eplan responsible coordinator a choice van be made to apply another project format.

- Drawings per diagram type. We understand these to be Wiring diagrams, equipment lists and cable reports made under a separate function / location.
  If these drawings are combined under 1 Tata Steel drawing number, then these pages must be numbered. If the drawings are granted their own Tata Steel drawing number then a cover page with table of contents must be added.

- Drawings per (process) function. If the scale of the project is larger, the project will normally be divided into (process) functions. If these drawings are combined under 1 Tata Steel drawing number, then these pages must be numbered. If the drawings are granted their own Tata Steel drawing number then a cover page with table of contents must be added.

4. Forms

4.1. A single complete drawing

If the Eplan project consists of a single complete drawing as shown in Figure 8 on page 12, the following forms must be used:

- TATA STEEL VBP.SKE — Front page
- LG.SKG — Empty plotting grid for the front page
- TATA STEEL PKP.SKG — Plotting grid
- IO.SKJ — Table of contents
- AS.SKK — Connection diagram

4.1.1. Front Page

When creating a front page, the following details must be filled in/selected:

- Type — E = title page/front page
- Designation — FRONTPAGE
- Drawing number — Tata Steel Drawing number
- Extra field page — Page revisions
- Plotting grid — LG
- Form — TATA STEEL VB

As shown in the figure below:

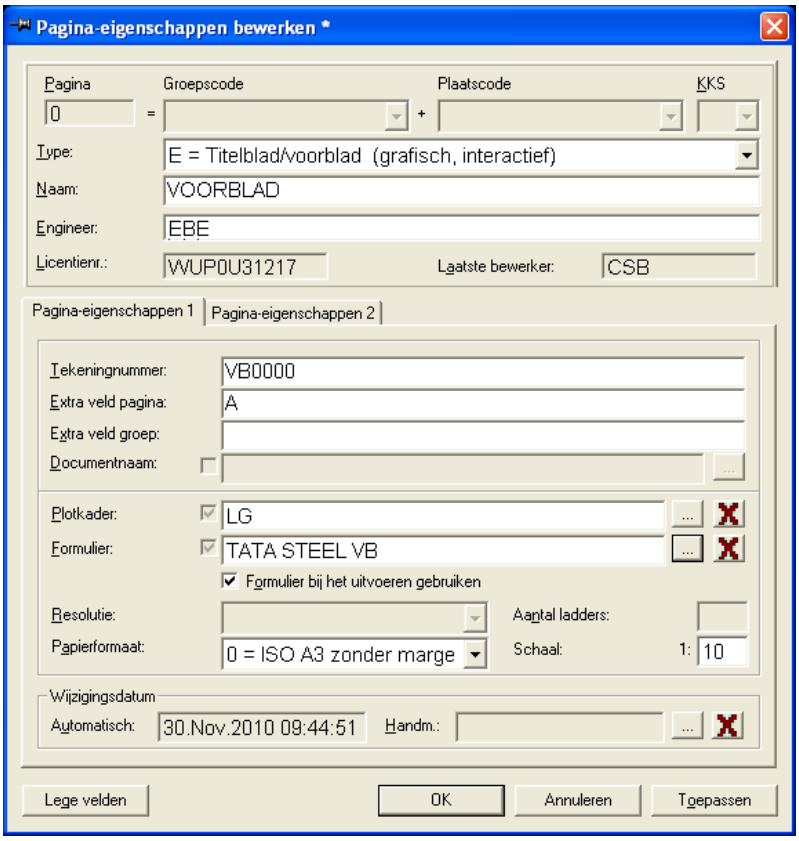


figure 13. Tab - Page Properties 1 Edit under Page Properties

To complete the title block a standard macro is available "MVB.MSF". This title should be derived from the drawings technical breakdown structure that Tata Steel uses in its DMS Structure (per drawing to be delivered by Tata Steel).

In Figure 15 an image is displayed of a cover sheet in which the data has been completed in a manner as described in the foregoing

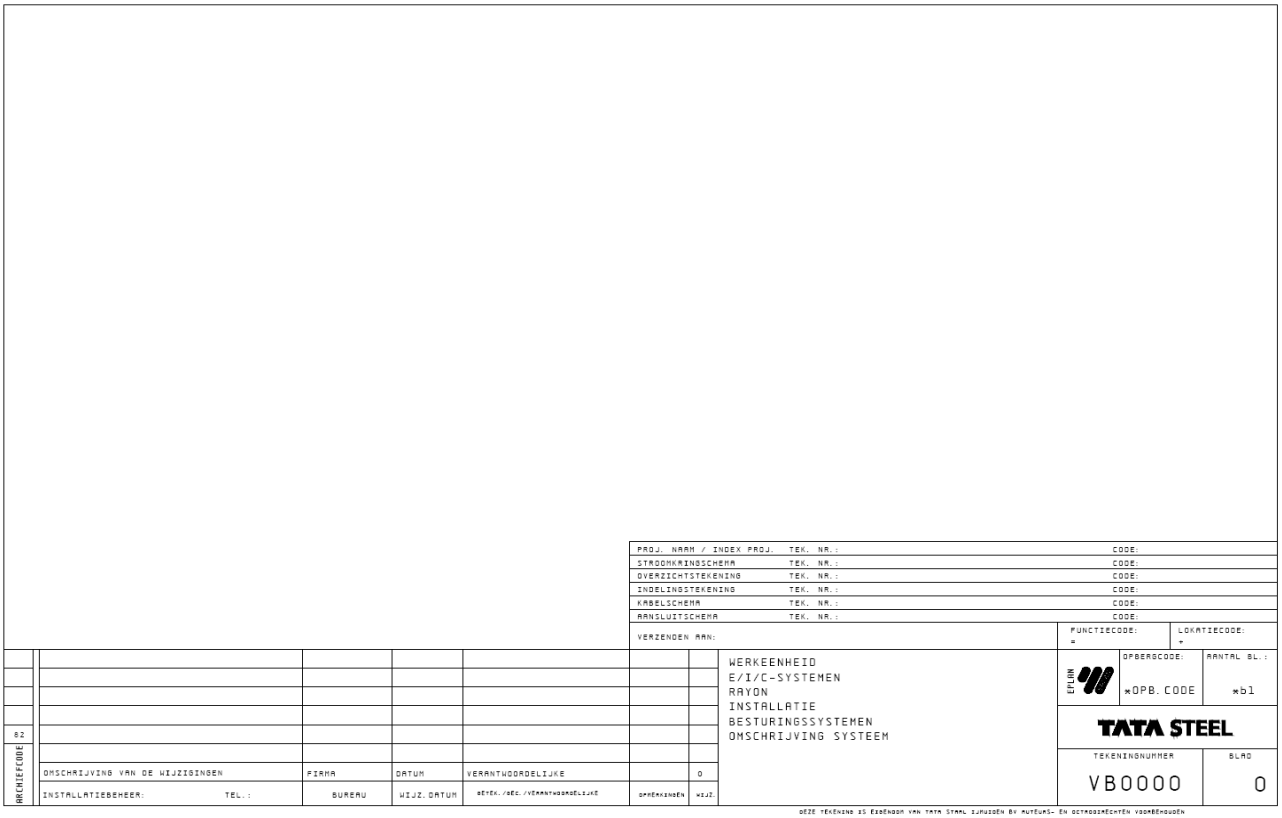


figure 15. Printout of a front page for complete drawings

4.1.2. Table of contents

When creating the table of contents the following details must be listed/selected:

- Type J = table of contents
- Designation INHOUDSOPGAVE
- Drawing number Tata Steel drawing number
- Extra field page Page revisions
- Plotting grid TATA STEEL PKP
- Form IO

As in figure below:

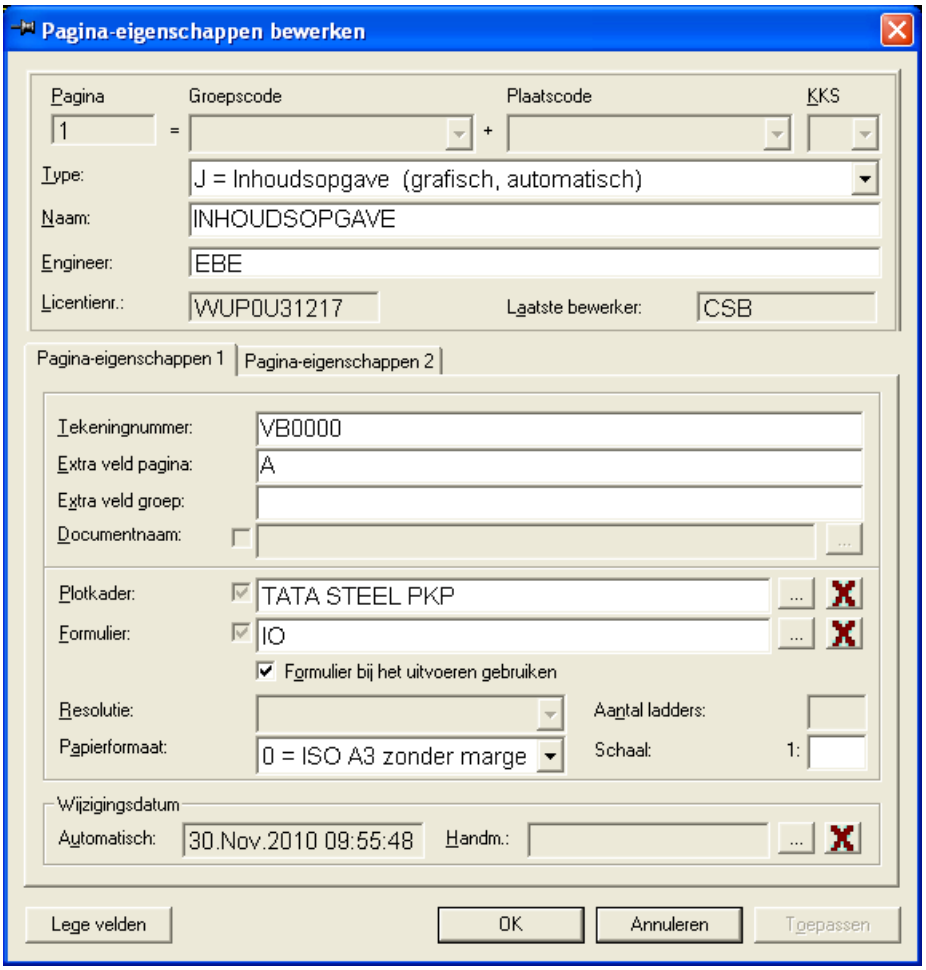


figure 16. Tab - Page Properties 1 Edit under Page Properties

Figure 17 shows a printout of the table of contents in which the details are filled in as described above.

BLAD NR.	BENAMING	REV.	BLAD NR.	BENAMING	REV.
0	VOORBLAD	A			
1	INHOUDSOPGAVE	A			
5	KABELBLOKSCHEMA	A			
10	STROOMKRINGSCHEMA	A			
15	AANSLUITSCHEMA	A			
20	KASTAANZICHT	A			
21	MATERIAALLIJST	A			

TATA STEEL	INHOUDSOPGAVE	FUNCTIECODE: - / LOKATIECODE: +	REVISIE A	TEKENINGNUMMER: VB0000	BLAD NR.: 1

DEZE TEKENING IS EIGENDOM VAN TATA STEEL IJMUIDEN BV MUTEUNS- EN OCTROOIRECHTEN VOORBEHOUDEN

figure 17. Printout of the Table of Contents for a Complete Drawing

After generating the table, a check must be made of whether the page descriptions are too large.

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4.1.3. Cable block diagrams

When creating the cable block diagrams, the following details must be filled in/ selected:

- Type W = single line pole view
- Designation KABELBLOKSCHEMA
- Drawing number Tata Steel drawing number
- Extra field page Page revisions
- Plotting grid TATA STEEL PKP
- Form -

as in figure below:

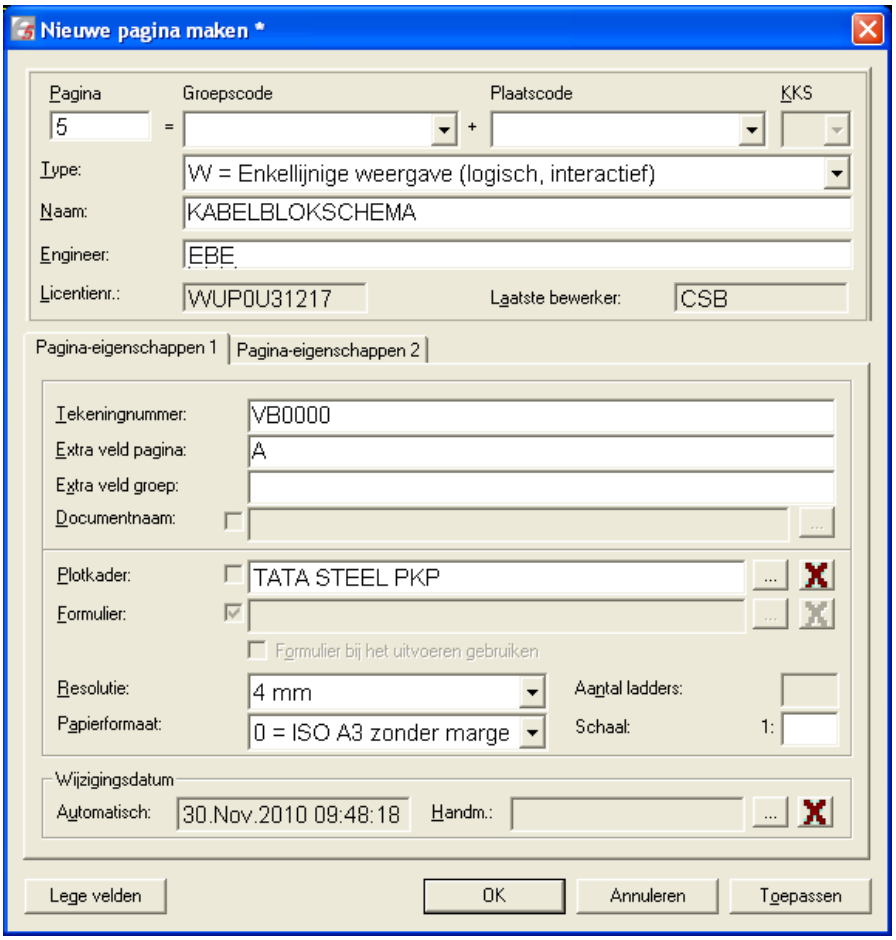

figure 18. Tab - Page Properties 1 Edit under Page Properties

Figure 19 shows a printout of a simple cable block diagram in which the details are filled in as described above.

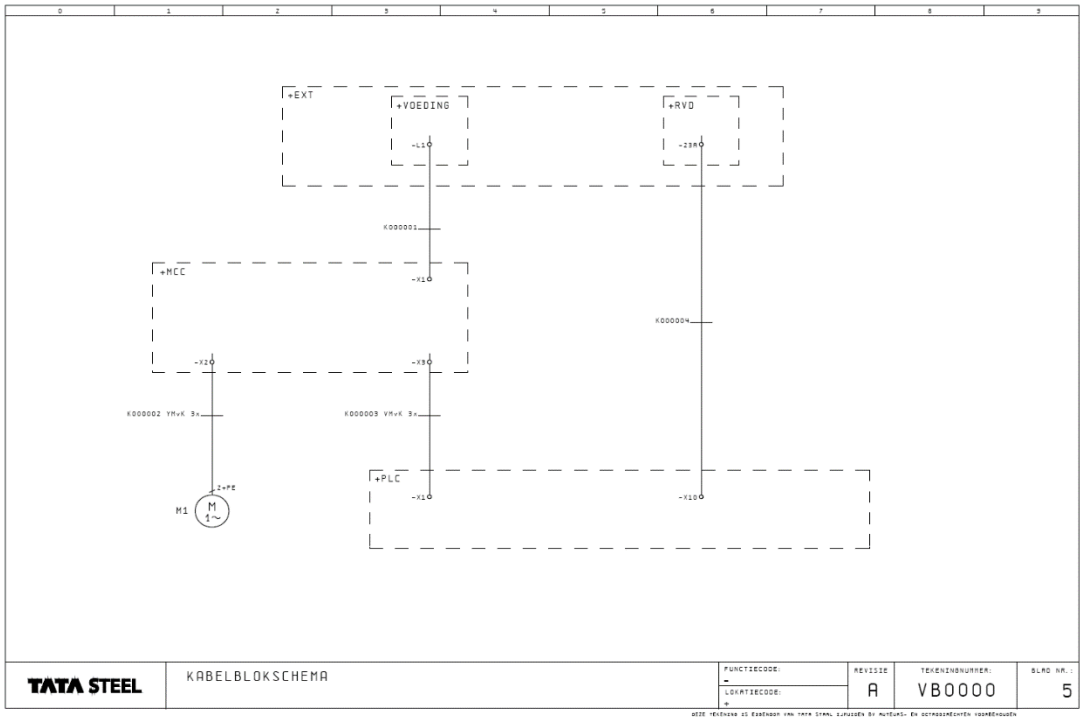

Figure 19. Printout of the cable block diagram

By using an additional coding box, the parts that do not belong to the installation of this Eplan project must be indicated (interface to “the exterior world”). In the figure above +EXT.

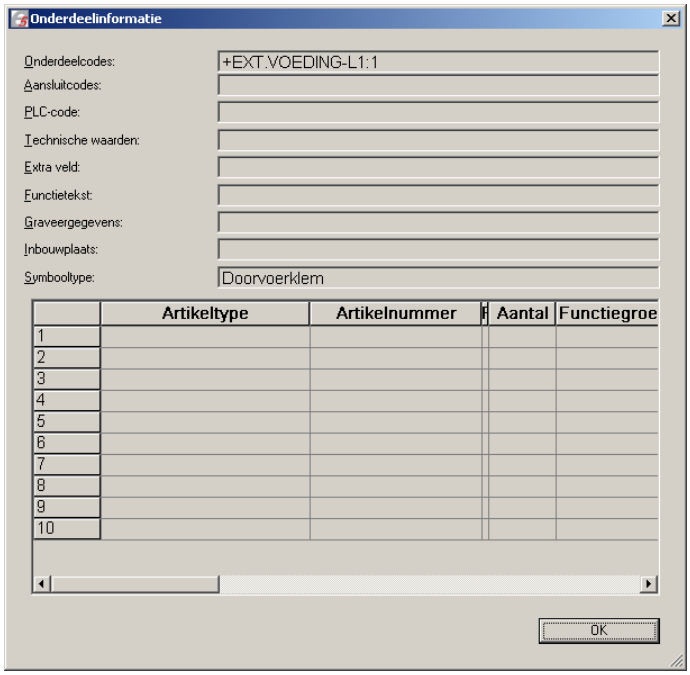

Figure 20. Information about component L1:1 terminal in POWER SUPPLY cabinet from Figure 19

4.1.4. Circuit diagrams

When creating the circuit diagrams, the following details must be filled in/ selected

- Type A = Diagram
- Designation e.g. INKOMENDE VOEDING
- Drawing number Tata Steel drawing number
- Extra field page Page revisions
- Plotting grid PKP
- Form -

as shown in the figure below:

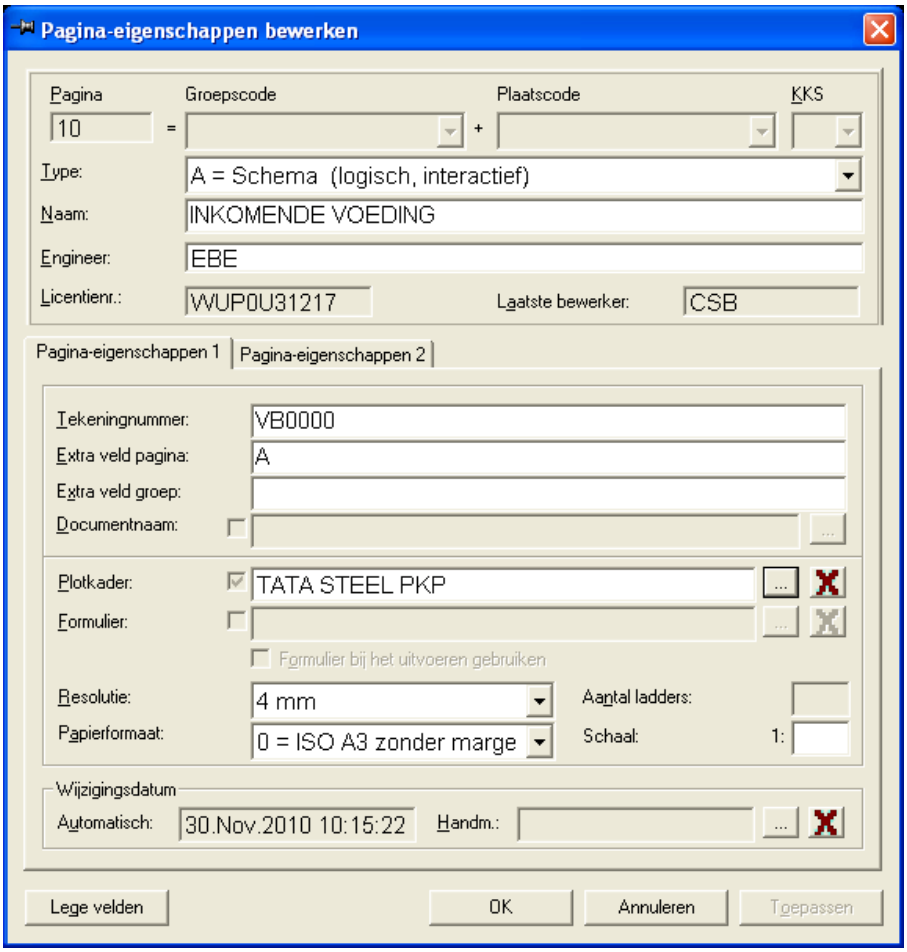

figure 21. Tab - Page Properties 1 Edit under Page Properties

For a detailed description refer to chapter 4.3.3 “**Circuit diagrams**” on page 30.

In figure 22, a print is displayed of a very simple circuit diagram in which the data has been completed in the manner as previously described:

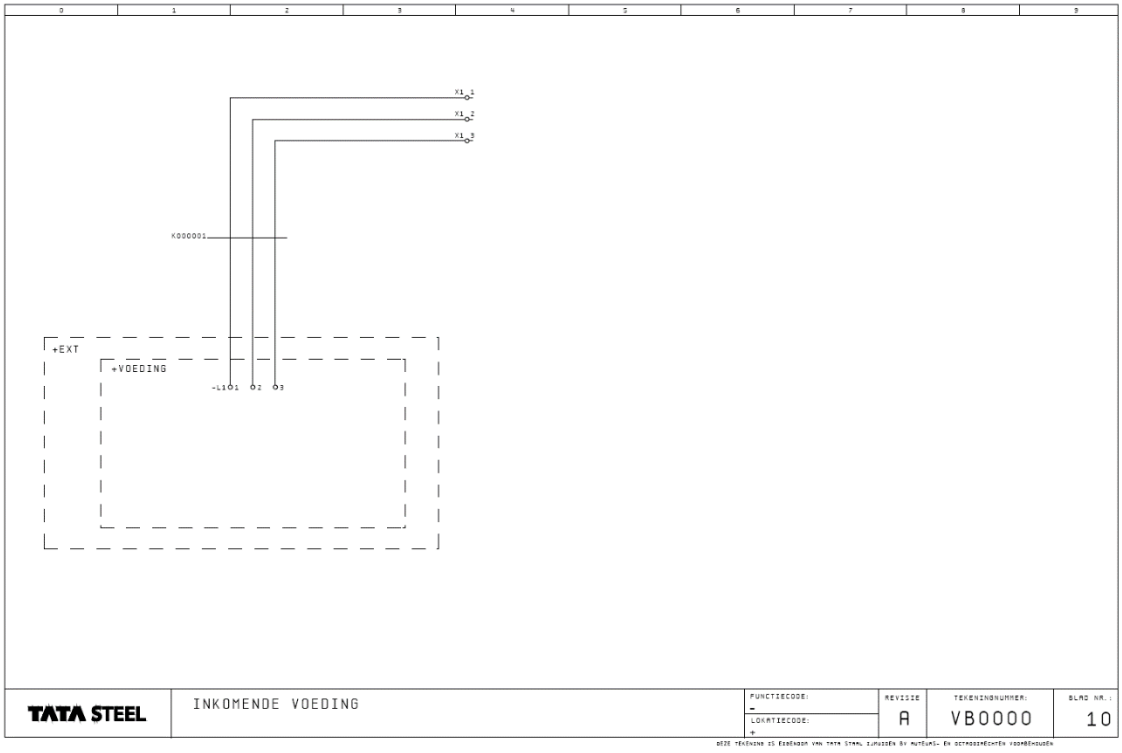

figure 22. Print of a circuit diagram

4.1.5. Connection diagrams

When generating and editing the connection diagrams, the following details must be filled in / selected

- Type K = Terminal connection list
- Designation AANSLUITSCHEMA
- Drawing number Tata Steel drawing number
- Extra field page Page revisions
- Plotting grid PKP
- Form AS

as shown in the figure below:

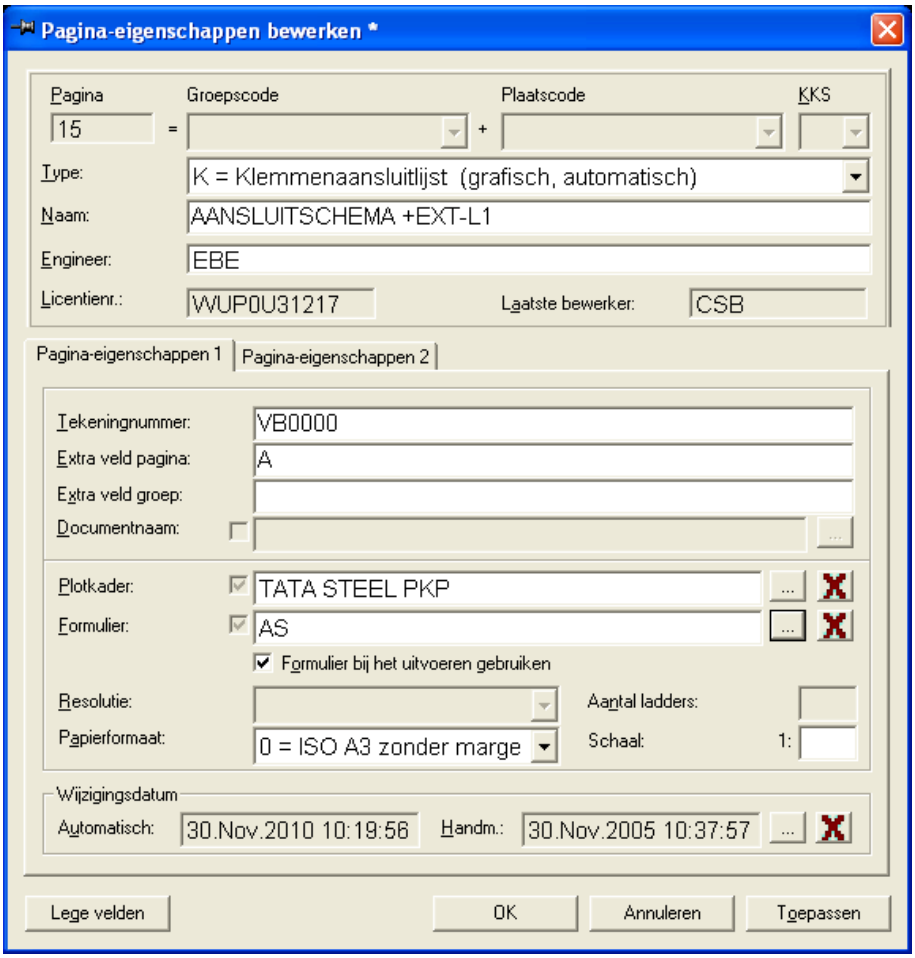

figure 23. Tab - Page Properties 1 Edit under Page Properties

The designation convention of the terminal strips must be defined in the group EPLAN as described in chapter 4.6 “Eplan group” on page 34.

Figure 24 shows a printout of the connection diagram for which the details are filled in as described above.

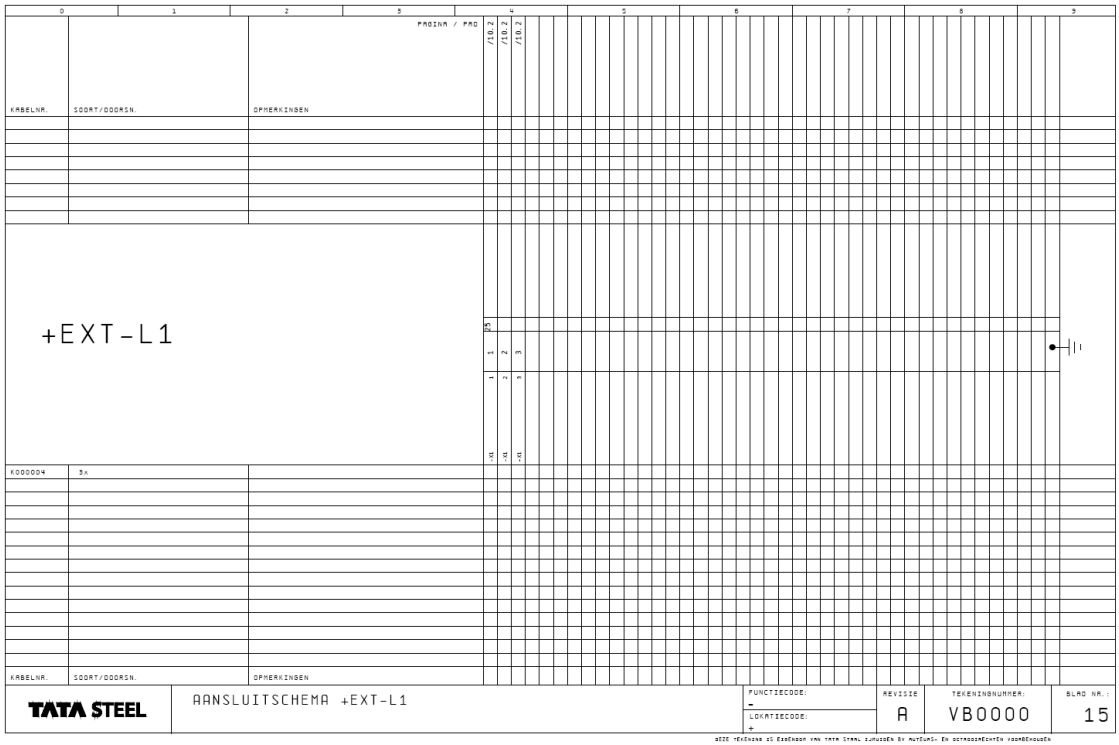

figure 24. Printout of a connection diagram of a Complete Drawing

Remark: **W**hen creating wiring diagrams extension of the terminal strips should be taken into account.

4.2. Overview drawing

To visualise the following components, a second project VB0001-001 has been created.

If the Eplan project consists of several drawings, as is shown in Figure 8 on page 12, the following forms must be used for the top level drawing.

- TATA STEEL VBP.SKE — Front page
- LG.SKG — Empty plotting grid for the front page
- TATA STEEL PKP.SKG — Plotting grid
- IO.SKJ — Table of contents
- FLP.SKY — Group/ location overview (index project)

For a description of

- Table of contents refer to chapter 4.1.2 “Table **of contents**” on page 16
- Cable Block diagram refer to 4.1.3 “Cable **block diagram**” on page 18
- Connection diagrams refer to 4.1.5 “Connection **diagrams**” on page 22

4.2.1. Front Page

When creating a front page, the following details must be filled in/selected

- Type — E = title page / front page
- Designation — VOORBLAD
- Drawing number — If required Associated drawings (outside the Eplan project)
- Extra field page — Revision of the project
- Plotting grid — LG
- Form — TATA STEEL VBP

as shown in the figure below:

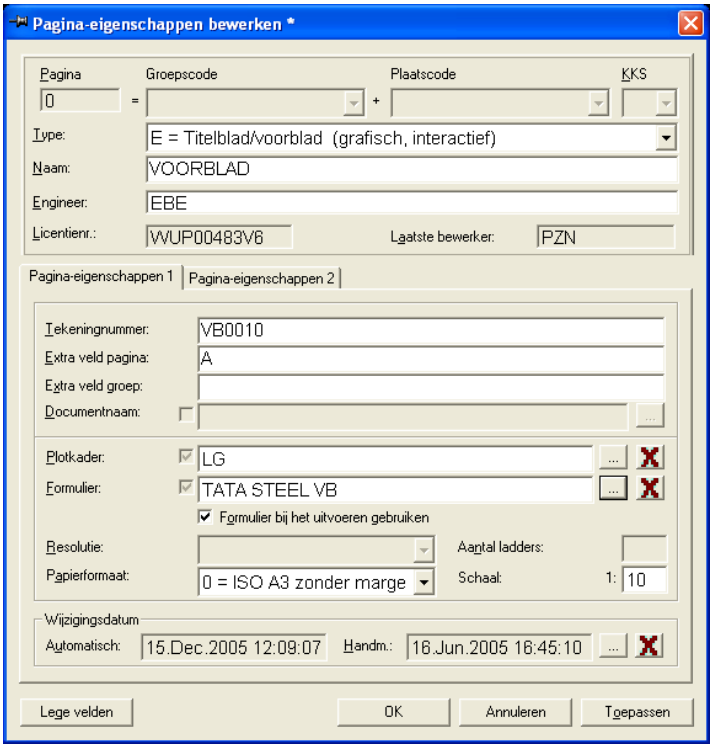

Figure 25. Tab - Page Properties 1 Edit under Page Tab - Page Properties
For other information refer to chapter 4.1.1 “Front **Page**” on page14.
Figure 26 shows a front page printout for which the details are filled in as described above.

figure 26. printout of the front page of a overview drawing

4.2.2. Group-/location overview

After generating the group/ location overview, the following details must be filled in/ selected

- Type — Y = Group/location overview
- Designation — GROEPS-/PLAATS OVERZICHT
- Drawing number — If required Associated drawings (outside the Eplan project)
- Extra field page — Revision of project
- Plot frame — TATA STEEL PKP
- Form — FLP

as shown in the figure below:

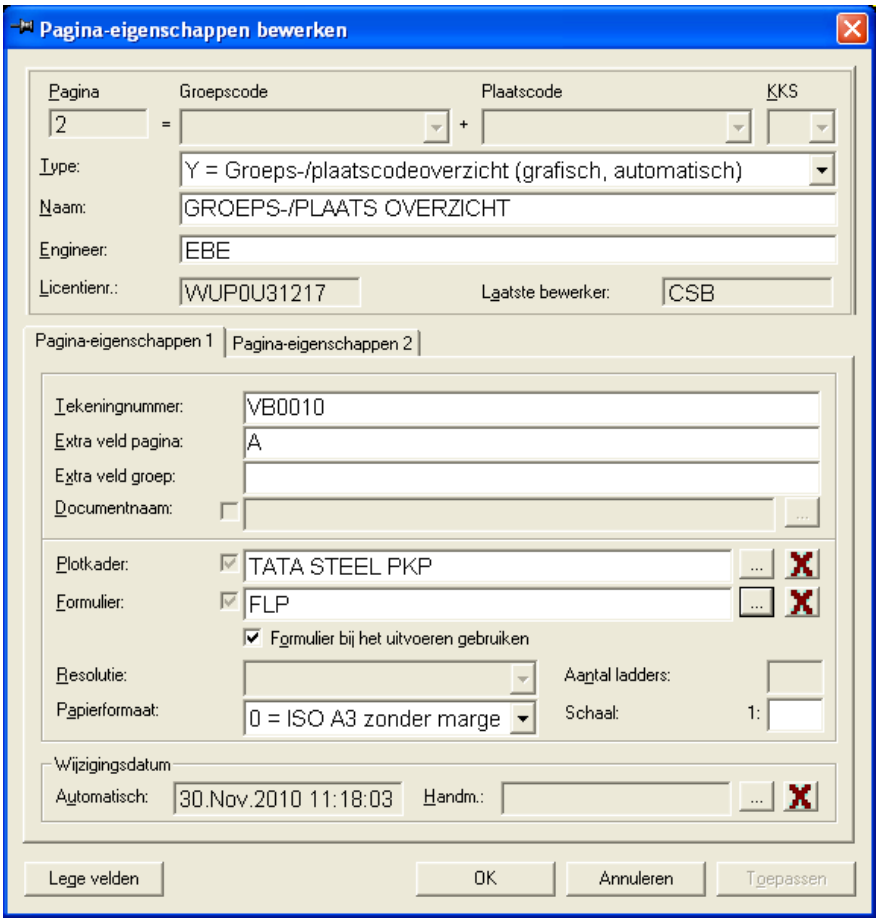

figure 27. Tab - Page Properties 1 Edit under Page Tab - Page Properties

Figure 28 shows a printout of a group-/location overview with the details filled in according to the description above. (See figure no 10, chapter 3.2 Several complete drawings):

FUNCTIECODE:	BESCHRIJVING:	LOKATIECODE:	BESCHRIJVING:
FUNCTIE_KAST_11	VB0004-000 BESTURING VELD 1	LOKATIE_KAST_1	VB0002-000 CENTRALE BESTURING
FUNCTIE_KAST_22	VB0005-000 BESTURING VELD 2	LOKATIE_KAST_2	VB0003-000 REMOTE I/O
EPLAN			

TATA STEEL	GROEPS-/PLAATS OVERZICHT	FUNCTIECODE: - / LOKATIECODE: +	REVISIE A	TEKENINGNUMMER: VB0010	BLAD NR.: 2

DEZE TEKENING IS EIGENDOM VAN TATA STEEL IJMUIDEN BV NUTEILAS- EN OSTRAGEREGTEN VOORBEHOUDEN

figure 28. Printout of Group-/location overview

4.3. Location and Function drawing

If the Eplan project consists of several drawings, as is shown in Figure 8, the following forms must be used for the location drawing.

- VBL.SKE Front page
- LG.SKG Empty plotting grid for the front page
- PKL.SKG Plotting grid
- IO.SKJ Table of contents
- AS.SKK Connection diagram

4.3.1. Front Page

When creating a front page, the following details must be filled in/ selected

- Type E = Title page / front page
- Designation VOORBLAD
- Drawing number Tata Steel drawing number
- Extra field page Revision of drawing set.
- Plotting grid LG
- Form Tata Steel VB

as shown in the figure below:

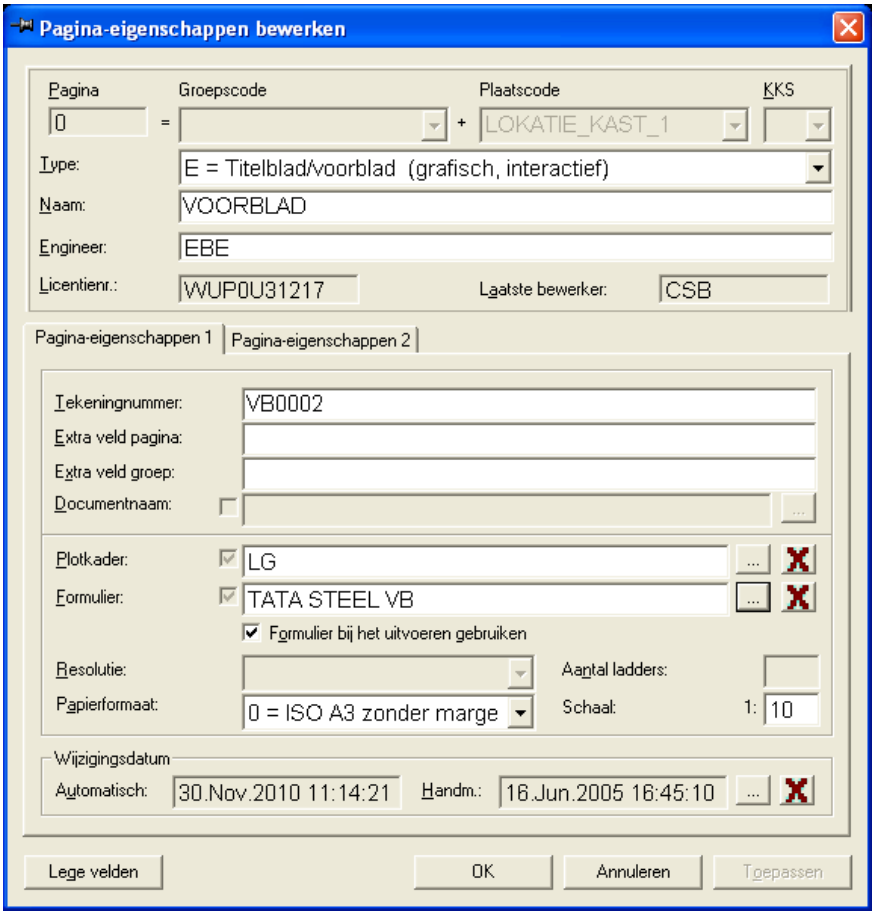

figure 29. Tab - Page Properties 1 Edit under Page Tab - Page Properties

figure 30 shows a print-out of a group-/location overview with the details filled in according to the description above.
With Eplan drawings the drawing number of the overview drawing will be automatically listed.

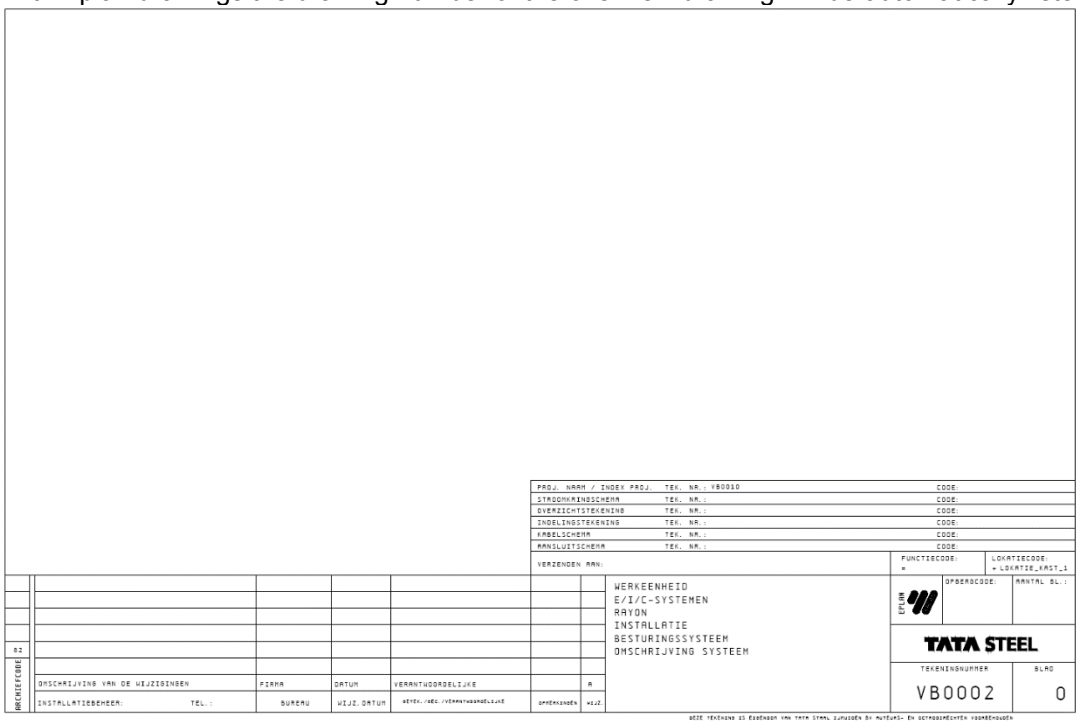

figure 30. Printout of a front page, location drawing

4.3.2. Table of contents

When creating the table of contents, the following details must be filled in/selected:

- Type J = Table of contents
- Designation TABLE OF CONTENTS
- Drawing number Tata Steel drawing number
- Extra field page Revision of the page
- Plotting grid TATA STEEL PKM
- Form IO

The data must be filled in the manner described in chapter 4.1.2 “Table **of contents**”.

4.3.3. Circuit diagrams

When creating the circuit diagrams, the following details must be filled in/selected

- Type A = Diagram
- Designation e.g. STROOMKRINGSCHEMA
- Drawing number Tata Steel drawing number
- Extra field page Revision of the page
- Plotting grid Tata Steel PKM
- Form -

as shown in the figure below:

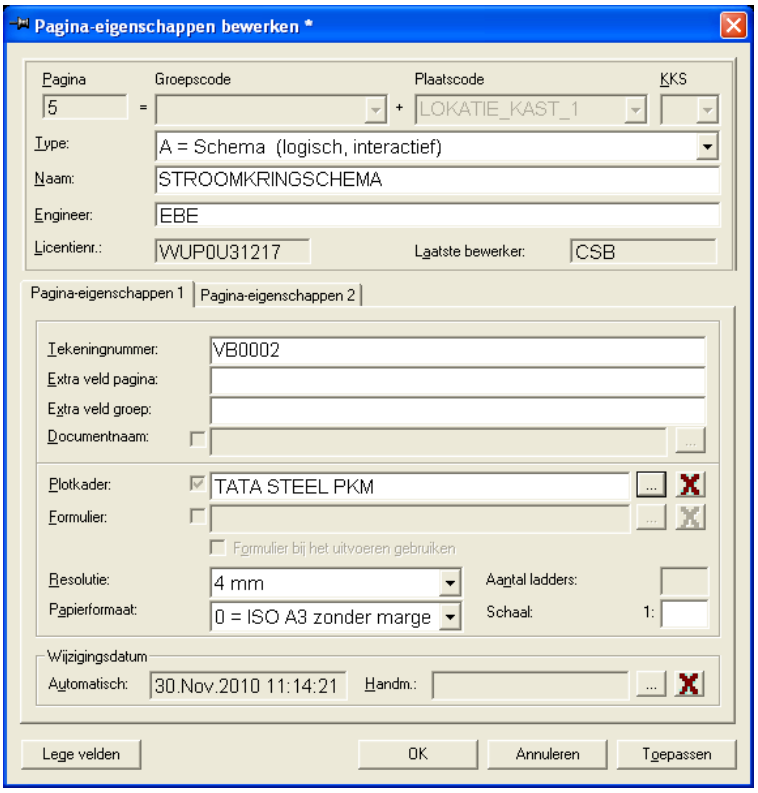

figure 31. Tab - Page Properties 1 Edit under Page Tab - Page Properties

4.3.3.1. Structure of page numbers

In relation to component coding, once assigned page numbers cannot be changed with impunity. This means that the page numbers must be grouped in a logical manner and a number of reserve numbers should be kept between the different groups.
A common group structure is:

- incoming power supply with main power distribution (400 V)
- power distribution (230 V)
- power distribution (24V)
- electrical control drives
- safety controls (hardware/ PLC)
- conventional controls (PLC/DCS/computer)
- interface signals to external systems

The number of reserved pages is dependent on the expected expansion.

Depending on the application, these groups may or may not occur, additional groups may be distinguished, whether there is a subdivision depends on the application.

For filling in the description a standard macro is available "MPB.MFE (for the top) and MPO.MFE (for the bottom)." This should be placed adjacent to the plotting grid as shown in Figure 36 on page 35. For this reason, when setting up the circuit diagrams drawings, draw them as centred as possible, per path.

Also refer to the requirements for page numbering in section 3 “Structure (group/ location code)” on page 10.

All lines on the drawings must be set to line thickness 0.13mm.

4.3.3.2. Component coding

The Structure in a drawing based on the principles used for conventional drawings.
This means that the components are drawn based on their location and coded according to **page-path coding**.
Figure 36 on page 36 gives examples for a switch (S52 => S = switch; 5 = page number; 2 = path number). A code should preferably be used only once. If codes occur more often, a suffix must be used. Separate codes are usually used for field instruments, engines, etc. This must be agreed with the Tata Steel responsible coordinator.

Codes for electrical cabinet equipment must be preceded by the cabinet code, as shown in the figure below (+432). With the component the associated articles must be selected.

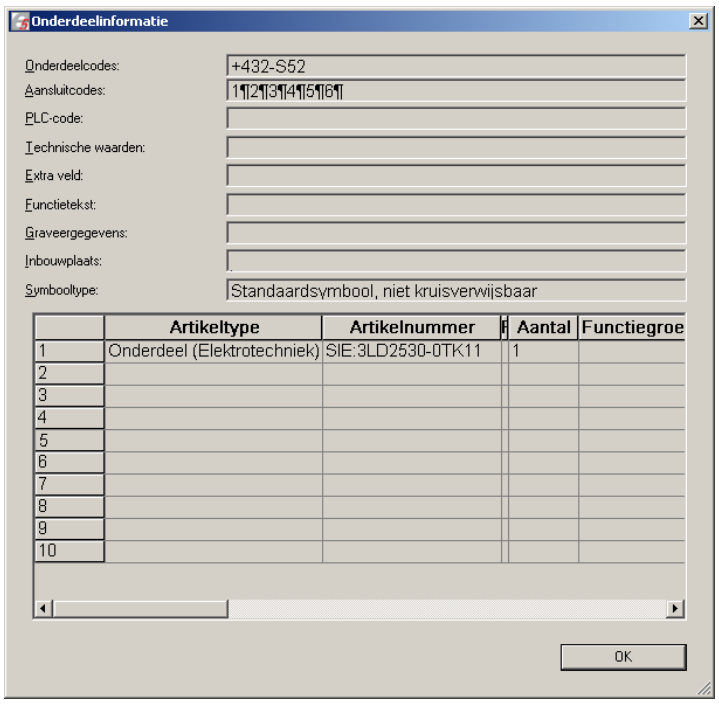

figure 32. Information about component S52 in figure 36

For components that do not belong to the location code, coding boxes like those shown in Figure 36 must be used.

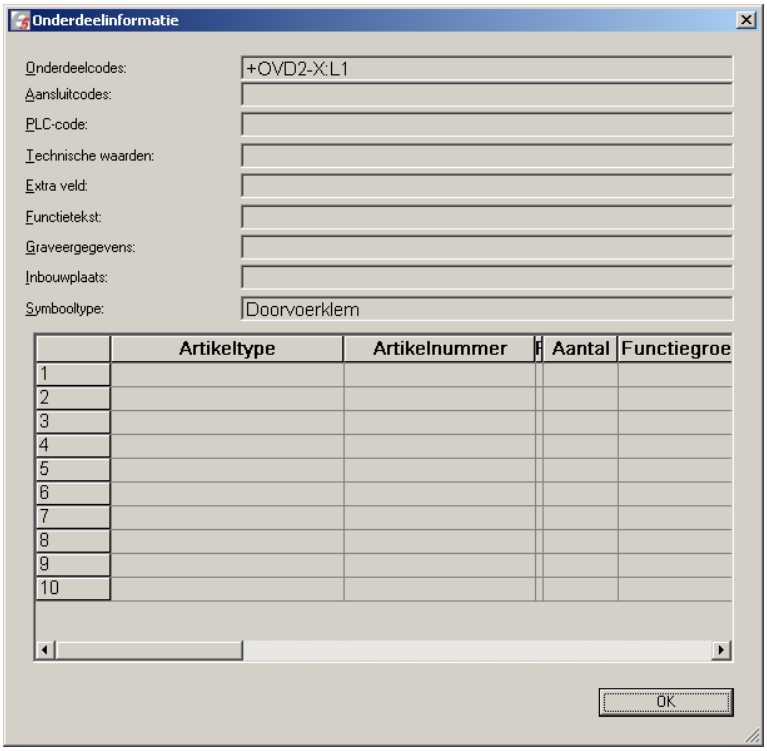

figure 33. Information about component X:L1 a terminal in the cabinet +OVD2 in figure 36

4.3.3.3. Cable coding

Cable codes are issued centrally per work unit and usually consist of

- two letters (sometimes preceded by 1 or 2 digits)
- and a serial number with a maximum of 5 digits

Tata Steel issues a series of cable numbers that can be used for a project.

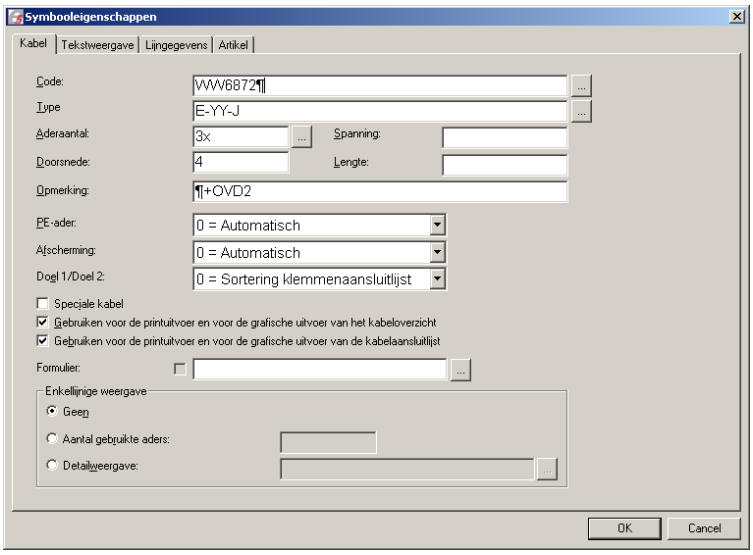

figure 34. Information about cable WW6872 from figure 36

4.3.3.4. Coding interruption points

The designation for interruption points are based on the component that are connected to the supply side. If a situation were to exist where several interruption points would receive the same code, then serial numbers must be used.
Figure 36 shows an example.

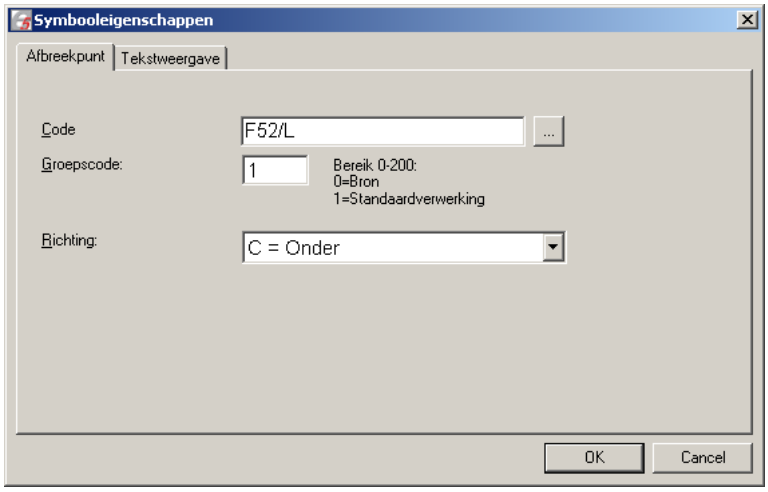

figure 35. Information about interruption points from figure 36

4.3.3.5. Example

Figure 36 shows a printout of a circuit diagram for which the details are filled in and drawn as described above:

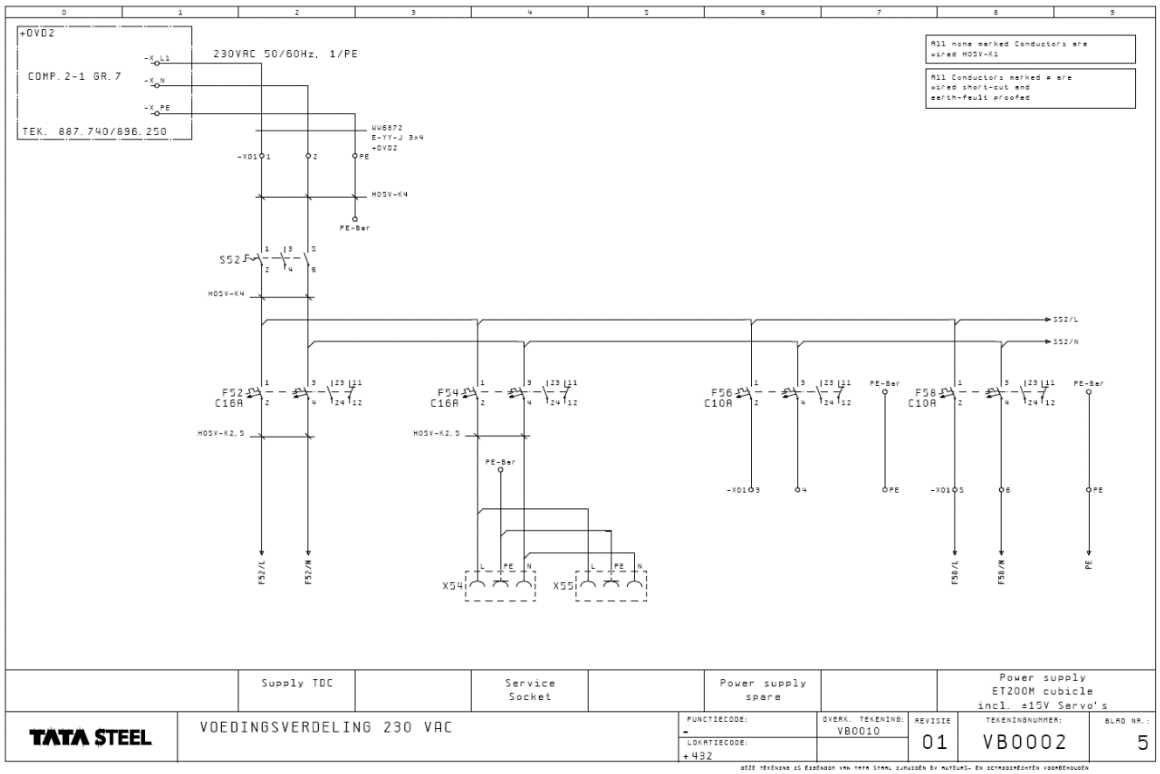

figure 36. Printout of the circuit diagram

4.4. Terminal group

In addition to structuring in locations and if required functions as described in Chapter 3 Structure (group/ location code) on page 10 for the "field" terminal cabinets, a higher level group, “KLEMMEN=TERMINALS”, must be created in which the connection diagrams and, if required, arrangements of the local terminal boxes are collected. This group receives a separate Tata Steel drawing number and must be drawn conform to section 4.1.5 “**Connection diagrams**” op page 22.

4.5. Terminals under location

Often With a location/function drawing package, wiring diagrams are generated under their corresponding location code. The Tata Steel responsible coordinator should be consulted if this applies to the package to be made.

4.6. Eplan group

The designations of the terminal strips must be centrally shown on a page in the group EPLAN. An example is shown in the figure below:

figure 37. Printout of a terminal strip overview

Material Lists and cable lists are not included as standard in Tata Steel drawings. This data will be exported to other applications. In consultation with the responsible Tata Steel coordinator, these forms can be included in the drawings. Forms are available for the correct graphic presentation on delivery.

4.6.1. Bill of material

When generating a bill of material (Materiaallijst) the following details must be filled in / selected

- Type O = Bill of material
- Designation MATERIAALLIJST
- Plotting grid Tata Steel PKP
- Form ML

as shown in the figure below:

Aant.	Code	Omschrijving	Fabrikaat	Type	Opmerking	Bestelnummer
1	+432-S1	MAIN-SWITCH 3-POLE, IU=63A, 400V	SIEMENS AG	3LD2530-0TK11		
1	+432-F1	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 16A	SIEMENS AG	5SX2216-7		
1	+432-F1	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F2	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 16A	SIEMENS AG	5SX2216-7		
1	+432-F2	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-X11	SOKET, 250V 50HZ, 16A	PHOENIX	SD-D/SC/LM		
1	+432-X12	SOKET, 250V 50HZ, 16A	PHOENIX	SD-D/SC/LM		
1	+432-F11	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 10A	SIEMENS AG	5SX2210-7		
1	+432-F11	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F12	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 10A	SIEMENS AG	5SX2210-7		
1	+432-F12	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-924	SITOP POWER 10 IN: 120/230VAC OUT: 24VDC/10A	SIEMENS AG	6EP1334-2BA00		
1	+432-F24	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 10A	SIEMENS AG	5SX2210-7		
1	+432-F24	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F241	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F241	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F242	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F242	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F243	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F243	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F244	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F244	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F245	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F245	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F246	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F246	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F247	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F247	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F248	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F248	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F249	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F249	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-925	SITOP POWER 5 IN: 120/230VAC OUT: 24VDC/5A	SIEMENS AG	6EP1333-2BA00		
1	+432-F25	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 6A	SIEMENS AG	5SX2206-7		
1	+432-F25	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F251	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F251	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F252	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 0,5A	SIEMENS AG	5SX2205-7		
1	+432-F252	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F253	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 0,5A	SIEMENS AG	5SX2205-7		
1	+432-F253	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F254	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 0,5A	SIEMENS AG	5SX2205-7		
1	+432-F254	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F255	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 0,5A	SIEMENS AG	5SX2205-7		
1	+432-F255	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-926	SITOP POWER 5 IN: 120/230VAC OUT: 24VDC/5A	SIEMENS AG	6EP1333-2BA00		
1	+432-F26	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 6A	SIEMENS AG	5SX2206-7		
1	+432-F26	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F261	N-TYPE AC MIN. CIRC. -BREAKER, 2-POLE, C 3A	SIEMENS AG	5SX2203-7		
1	+432-F261	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F262	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 0,5A	SIEMENS AG	5SX2205-7		
1	+432-F262	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F263	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 0,5A	SIEMENS AG	5SX2205-7		
1	+432-F263	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F264	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 0,5A	SIEMENS AG	5SX2205-7		
1	+432-F264	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		
1	+432-F265	N-TYPE AC MIN.CIRC. -BREAKER, 2-POLE, C 0,5A	SIEMENS AG	5SX2205-7		
1	+432-F265	AUXIL.CONTACT CAN BE MOUNTED ON, 1NO+1NC	SIEMENS AG	5SX9100		

TATA STEEL	MATERIAALLIJST	FUNCTIECODE: -EPLAN LOKATIECODE: +	OVERK. TEKENING: VB0010	REVISIE A	TEKENINGNUMMER: VB0010	BLAD NR.: 50

DEZE TEKENING IS EIGENDOM VAN TATA STAAL IJMUIDEN BV MUTEUMS- EN OCTROOIRECHTEN VOORBEHOUDEN

figure 38. Printout of the bill of material

4.6.2. Cable list

After generating the cable list, the following details must be filled in/ selected

- Type S = Cable overview
- Name CABLE LIST
- Plotting grid Tata Steel PKP
- Form KL

as shown in the figure below:

Figure 39 shows a printout of the cable list in which the details are filled in as described above.

Kabel nr.	Van	Naar	Kabeltype	Aders	Doorsn.	Opmerkingen
3W8169	+ET_ASC2-X3	+ET_ASC2-02-X50	YMvK	3	2.5	TER.BOS 02-X50
1W-27095	+432-X601	+432-02-X51	STC/300	10x2S	1	TERM.BOX 02-X51
1W-27096	+432-X4	+432-02-X51	STC/300	10x2S	1	TERM.BOX 02-X51
1W-27097	+432-X501	+432-02-X51	STC/300	5x2S	1	TERM.BOX 02-X51
1W-27167	+432-463CTB2B	+432-X901	S/300	12	1	MC PANEL452-462
1W-27751	+ET_ASC2-X3	+ET_ASC2-02-X19	S/300	7	1	THERM.BOX 02-X19
1W-27769	+432-02-X29	+ET_ASC2-X3	STC/300	10x2S	1	TERM.BOX 02-X29
1W-27773	+432-02-X31	+ET_ASC2-X3	STC/300	10x2S	1	TERM.BOX 02-X31
1W-27825	+432-02-X50	+ET_ASC2-X3		8	-	
1W-27826	+432-02-X50	+ET_ASC2-X3	STC/300	5x2S	1	TERM.BOX 02-X50
1W-27830	+432-X701	+432-02-X60	STC/300	3x2S	1	TERM.BOX 02-X60
1W-27833	+432-463CTB2B	+432-X901	S/300	3	1	MC PANEL452/462
1W-27834	+432-CTB2B	+432-X801	STC/300	3x2S	1	MC PANEL 452/462
1W-27932	+432-CTB2B	+432-X901	S/300	3	1	IO PANEL454
1W-28334	+ET_ASC2-U1	+ET_ASC2-02-X19		5	0.5	
1W-28350	+432-02-X29	+432-SV480		6	-	
1W-28351	+432-02-X29	+432-SV482		6	-	
1W-28352	+432-02-X29	+432-02-X65	STC/300	2x2S	1	
1W-28353	+432-02-X29	+432-02-X61	STC/300	2x2S	1	
1W-28354	+432-02-X29	+432-02-X62	STC/300	2x2S	1	
1W-28355	+432-02-X29	+432-02-X66	STC/300	2x2S	1	
1W-28356	+432-02-X31	+432-SV484		6	-	
1W-28357	+432-02-X31	+432-SV486		6	-	
1W-28358	+432-02-X31	+432-02-X63	STC/300	2x2S	1	
1W-28359	+432-02-X31	+432-02-X67	STC/300	2x2S	1	
1W-28360	+432-02-X31	+432-02-X68	STC/300	2x2S	1	
1W-28361	+432-02-X31	+432-02-X64	STC/300	2x2S	1	
1W-28867	+432-02-X50	+432-02-X51	STC/300	10x2S	1	
1W-28868	+432-02-X50	+432-02-X51	STC/300	10x2S	1	
1W-28896	+432-02-X50	+432-02-X51	STC/300	5x2S	1	TERM.BOX 02-X50
432WST102	+432-A286-X2	+432-X381	YSLY-JZ	18	1	INTERN
432WST202	+432-A296-X2	+432-X411	YSLY-JZ	18	1	INTERN
432WST302	+432-A306-X2	+432-X441	YSLY-JZ	18	1	INTERN
432WST402	+432-A316-X2	+432-X521	YSLY-JZ	18	1	INTERN
432WST502	+432-X5	+432-X461	YSLCY-OZ	18	1	INTERN

TATA STEEL | KABELLIJST | FUNCTIECODE: -EPLAN | LOKATIECODE: + | OVERK. TEKENING: VB0010 | REVISIE A | TEKENINGNUMMER: VB0010 | BLAD NR.: 70

figure 39. Printout of the cable list

5. Supplementary files

5.1. Symbols

It is expressly forbidden for suppliers to use their own symbol libraries**!**

To draw single line drawings(cable block diagrams) the file-ST TATA.SYM should be used.

In the drawing of diagrams the standard symbols as laid down in IEC 60617 must be used. For Tata Steel these rules are defined in the file ST-TATA.SYM.

If there is a need to create additional symbols, for, for instance, the multi-line diagrams, there a separate file is available XT-TATA.SYM. This file is only intended for simple symbols and if symbols are added for a project, these must be mentioned explicitly when the project is delivered.

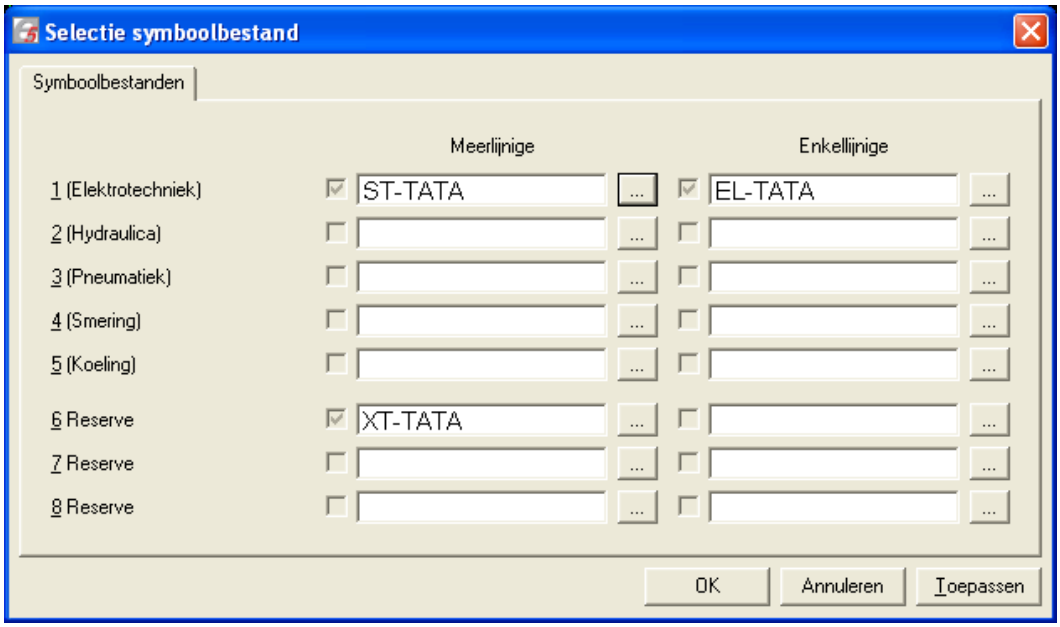

figure 40. Selection of symbol files

For more complex symbols and composite symbols, macros or black box techniques should be used.

5.2. Macros

Tata Steel has the following macros available:

- MVB.MSF for filling in titles on front pages
- MPB.MFE and MPB.MFE for filling in the descriptions in diagrams

If macros have been developed by the supplier we would like these to be included in the delivery.

6. Parts

To enable the means of generating a list of materials after the first delivery, it is imperative that all articles are made available in a file.

Remarks: When generating lists of material the article database must be available.
If lists of material are generated this data must also be provided in Excel, for the use of processing in SAP PM.

7. Send

Projects should always be sent using a **Z13** file. The figure below shows how this must be executed. It is important that the Cable type file, connector type file and print forms are also copied!

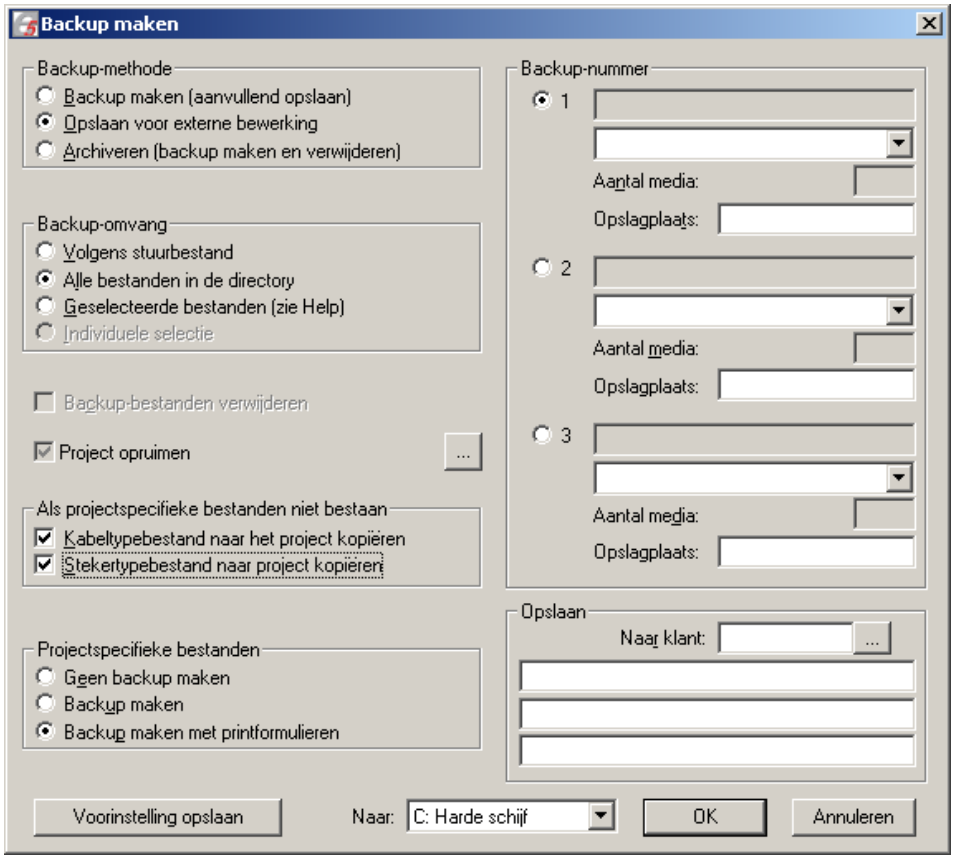

figure 42. Create settings for Z13

8. Explanation

Version 1.1:
New directive.

Intermediate versions are only issued for discussion purposes.

Version 4.0:
Completely updated version.