

Project LIFE12 ENV/IT/001095



TEA[®]

Tool for Environmental Analysis



TEA analysis for SANITSER rev.7

TARGET

TARGET



1. Support the collection of quantitative data in the optical analysis of the life cycle (LCA)
2. Calculate the main environmental indicators for evaluating the performance of the processes involved at various levels (production of raw materials for slips and glazes and production of sanitary)

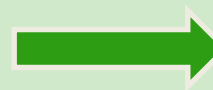
DELIVERABLE



Online questionnaire for collecting LCA information



Reports containing the trend of environmental performance (table + chart)



MAIN SCHEMA

LEVEL 0

External Database (DB) with secondary data

Environmental Database with SECONDARY DATA

LEVEL 1

PLANT inserting data on raw materials, slips, glazes and pilot plant

Raw materials - MI

Slip - SETEC

Pilot plant

Glaze - GEMICA

LEVEL 2

PLANT feeding DB with primary data

Environmental Database with PRIMARY and SECONDARY DATA

LEVEL 3

Admin SANITSER using information about slips, glazes and processes for composing a sanitary model.

SANITARY WARE

USERS

USERS	AUTHORIZATIONS AND FUNCTIONALITIES
SUPER ADMIN	<ul style="list-style-type: none"> • User management (create/edit users; assignment of production process phase to proper user)
ADMINISTRATOR	<ul style="list-style-type: none"> • Documents mangement • Data Check and Validation • Database management • Users management • Creation of the Sanitary model • View reports
PLANT – Minerali industriali (MI)	<ul style="list-style-type: none"> • Filling in the questionnaire related to raw materials for slips • Building the primary data in enviromental database • View reports
PLANT – OTHER	<ul style="list-style-type: none"> • Filling out the questionnaire for collecting data other processing phases (slips, glazes, pilot plant) • Builduing the primary data in envoiromental database • View reports

Correlation between database section and users

User (that feeds)	DATABASE - SECTION	DATABASE - CATEGORY
MINERALI INDUSTRIALI	MAT	Raw material
SETEC	OTH	Slip
GEMICA	OTH	Glaze
PILOT PLANT	OTH	Sanitary

HOME PAGE – PLANT USERS

ADMIN

PLANT
(MI)

PLANT
(OTHER)

The HOME PAGE has 3 functional boxes

1. **OPEN DOCUMENT:** box with button NEW DOCUMENT. (Put the questionnaire in status OPEN)
2. **SANITARY NUMBER:** box containing a table from which you can view the number of sanitary composed and click on view model.
3. **DOCUMENTS:** box containing a table from which you can edit or view documents realized by different plant users.

AUTHORIZATION:

Each document can be seen by everyone.

Only own documents can be edited

LOGO
SANITSER

Home

Data entry

Report

Open new document

New document

SANITARY NUMBER : 4

NUMBER	DATE	VIEW MODEL
sanitary1	28/09/2015	Link
sanitary2	28/09/2015	Link
sanitary3	01/10/2015	Link
sanitary4	01/10/2015	Link

QUESTIONNAIRE STATUS:

OPEN - questionnaire opened

SENT - questionnaire filled and sent. Only the ADMN can modify the questionnaire

VALIDATE - questionnaire validated. It is not editable anymore

AUTHORIZATIONS:

PLANT users:
- can see all documents (also those inserted by the other plant users) by using the "VIEW" button
- can edit only their own documents by using the "EDIT" button

Documents

PLANT	DOCUMENT	PERIOD	STATUS	VIEW	EDIT
filter	filter	filter	filter		
Minerali ind.	feldspati	01/01/14 - 30/09/14	VALIDATE		
Gemica	smalto 1	01/01/14 - 30/09/14	OPEN		
Setec	impasto ceramico 3	01/01/15 - 30/09/15	SENT		

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DATA ENTRY – PLANT USERS

ADMIN

PLANT
(MI)

PLANT
(OTHER)

DOCUMENT – REGISTRY

In this section PLANT can:

1. **INSERT** the **NAME** of the document
2. **INSERT** a **DESCRIPTION** (optional)
3. **SPECIFY** the **PERIOD OF TIME** for data collection.
4. **INSERT** an **AMOUNT** (units to be checked with other partners)

FUNCTIONS:

SAVE -> Save the document and change STATUS in OPEN

CANCEL -> Cancel the data not saved

Maximum length “Name” field: 50 characters

Maximum length “Description” field: 100 characters

LOGO
SANITSER

HomeData entryReport

PREVEDERE ALERT DI SLVATAGGIO DATI AL PASSAGGIO DA UNA PAGINA ALL'ALTRA

Document - Registry

REGISTRYMATERIALSENERGY CONSUMPTIONEMISSIONSWASTE

Name

Data collection 1st semester 2015

Description: (OPTIONAL)

Lorem ipsum dolor sit amet, maiores ornare ac fermentum, imperdiet ut vivamus a, nam lectus at nunc. Quam euismod sem, semper ut potenti pellentesque quisque.

Period:

Start

1/01/2015

End

30/06/2015

quantitiy

AMOUNT

kg/tons

L'unità di riferimento per gli utenti plant è il kg. Da valutare con gli altri partner se preferiscono la tonnellata

SAVE

“SAVE” button opens the data collection. Questionnaire in OPEN STATUS

CANCEL

DATA ENTRY- PLANT USERS

ADMIN

PLANT
(MI)

PLANT
(OTHER)

DOCUMENT – MATERIALS

In this section PLANT can:

- CHOOSE MATERIALS used for recipe
- INSERT for each material an amount
- SPECIFY (if necessary) TRANSPORT DATA for each material

TRANSPORT MATRIX:

For each amount of material (%) is possible to specify the type of transport (truck, rail and ship) and km covered

FUNCTION:

SAVE -> Save the document

SEND -> clicking on send, the tool performs some control

1. Check the mass balance **(to be checked with MI)**
2. Check the yield **(to be checked with MI)**
3. If everything is OK, the questionnaire changes status in SEND.
4. If there are errors plant users write them in a pop up for the administrator (the pop up has a send and cancel button)
5. Send an email to the administrator

CANCEL -> Cancel the data not saved

The interface shows a navigation bar with 'Home', 'Data entry', and 'Report'. The 'Data entry' section is titled 'Document - Materials' and has tabs for 'REGISTRY', 'MATERIALS', 'ENERGY CONSUMPTION', 'EMISSIONS', and 'WASTE'. The 'MATERIALS' tab is active, displaying a table with columns: QUESTION, amount, udm, admin alert, and transport. The 'transport' column has a dropdown menu with options: truck (km), rail (km), and ship (km). A 'save' button is visible next to the table. A 'SEND' button is located below the table, with a 'CANCEL' button to its right. A red text box indicates: 'ALMENO UN CAMPO PER TAB DEVE ESSERE VALORIZZATO AFFINCHÈ IL SEND FUNZIONI'. Below this, a red text box states: 'Al SEND il tool deve controllare automaticamente il BILANCIO di MASSA e/o la RESA del PROCESSO. ANCORA DA VERIFICARE con MIN IND:'. A 'save' button is also visible in the top right corner of the interface.

QUESTION	amount	udm	admin alert	transport
specify type of material				truck (km)
specify type of material				truck (km)
specify type of material				truck (km)

% material	truck (km)	rail (km)	ship (km)
95	100		
5	0	500	

save close

SAVE CANCEL

SEND

ALMENO UN CAMPO PER TAB DEVE ESSERE VALORIZZATO AFFINCHÈ IL SEND FUNZIONI

Al SEND il tool deve controllare automaticamente il BILANCIO di MASSA e/o la RESA del PROCESSO.
ANCORA DA VERIFICARE con MIN IND:

DATA ENTRY- PLANT USERS

ADMIN

PLANT
(MI)

PLANT
(OTHER)

DOCUMENT – ENERGY CONSUMPTION

In this section PLANT can:

- CHOOSE energy carrier, used for the process.
- INSERT the AMOUNT of energy used per carrier

FUNCTION:

SAVE -> Save the document

SEND -> clicking on send, the tool performs some control

1. Check the mass balance **(to be checked with MI)**
2. Check the yield **(to be checked with MI)**
3. If everything is OK, the questionnaire status changes in SEND.
4. If there are errors plant users write them in a pop up for the administrator (the pop up has a send and cancel button).
5. Send an email to the administrator

CANCEL - > cancel the data not saved

LOGO
SANITSER

Home

Data entry

Report

Document - Energy consumption


REGISTRY

MATERIALS

ENERGY CONSUMPTION

EMISSIONS

WASTE

QUESTION	amount	uom	admin alert
Electricity		kWh	
Methane		Nm3	
Diesel	10000	l	 info
Gasoline		l	
Fuel oil		l	
specify type of energy		l	

ADMIN: POP UP/TOOLTIP
con note scritte dall'admin

PLANT: risposta note del PLANT

ADMIN: POP UP/TOOLTIP
con note scritte dall'admin

SAVE

CANCEL

SEND

ENERGY: EE value < 30%

BILANCIO DI MASSA: valore non congruente

send

cancel

IL TOOL automaticamente controlla alcuni dati.
BILANCIO DI MASSA;
ALERT RANGE AUTOMATICO DI TOLLERANZA DOVE PRESENTE
EVENTUALI DOMANDE OBBLIGATORIE MANCATI (BLOCCANTE)

RESA DI PROCESSO (ancora da verificare con MIIND)

SE NON PRESENTI ERRORI INVIA LA RACCOLTA DATI.
SE PRESENTI ERRORI, VISUALIZZA LA REPORTISTICA IN UN POP UP,
CON TASTI INIVA E ANNULLA

IL SEND PREVEDE LA CHIUSURA DEL QUESTIONARIO, E L'INVIO
ALL'ADMIN DELLA MAIL DI AVVENUTA COMPILAZIONE

DATA ENTRY- PLANT USERS

ADMIN

PLANT
(MI)

PLANT
(OTHER)

DOCUMENT – EMISSIONS

In this section PLANT can:

- CHOOSE the substances coming from the process
- INSERT the AMOUNT of substances released

FUNCTION:

SAVE -> Save the document

SEND -> clicking on send, the tool performs some control

1. Check the mass balance **(to be checked with MI)**
2. Check the yield **(to be checked with MI)**
3. If everything is OK, the questionnaire changes status in SEND.
4. If there are errors plant users write them in a pop up for the administrator (the pop up has a send and cancel button)
5. Send an email to the administrator

CANCEL -> cancel the data not saved

LOGO
SANITSER

Home

Data entry

Report

Document - Emissions

REGISTRY MATERIALS ENERGY CONSUMPTION EMISSIONS WASTE

AIR EMISSIONS	amount	uom	admin alert
DUST			
SOV			
CO2			
NOx			
SOx			
specify type of atm emissions			

WATER EMISSIONS	amount	uom	admin alert
PH			
COD			
BOD			
Sostanze solide sospese			
Sostanze organiche			
specify type of water emissions			

SAVE

CANCEL

SEND

REPORT – ALL USERS

ADMIN

PLANT
(MI)

PLANT
(OTHER)

REPORT – DOCUMENT

In this report **USERS** can view the impacts of a single document or compare the indicators of different documents.

- **PLANT** can only view its own documents;
- **ADMIN** can view and compare all the documents;

ONLY the VALIDATE DOCUMENT CAN BE SELECTED

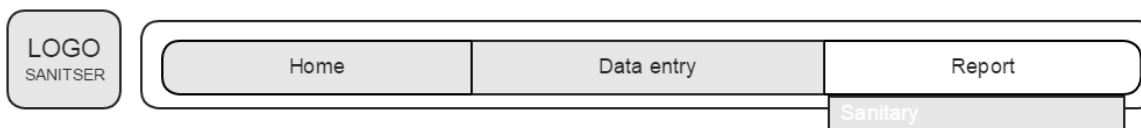
FUNCTION:

MULTISELECT DOCUMENT -> select document for which want to compare the results

ICON GRAPH -> click on it can view the histogram chart. The default chart is GWP.

The indicators are:

- GWP
- USE OF SECONDARY MATERIAL
- RENEWABLE ENERGY CONSUMPTION
- NON RENEWABLE ENERGY CONSUMPTION
- HAZARDOUS WASTE
- NOT HAZARDOUS WASTE



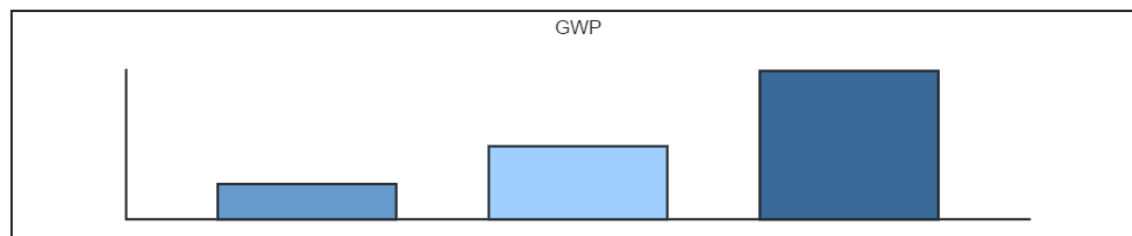
REPORT - plant

Results per UNIT

Document 1



MULTISELECT
il PLANT seleziona una o più documenti su cui visualizzare il report



GRAPH	INDICATOR	document 1	document 2	document 3	document n.
	GWP [kg co2]				
	USE OF SECONDARY MATERIAL [kg]				
	RENEWABLE ENERGY CONSUMPTION [MJ]				
	NON RENEWABLE ENERGY CONSUMPTION [MJ]				
	HAZARDOUS WASTE [kg]				
	NOT HAZARDOUS WASTE [kg]				

REPORT – SANITARY – ALL USERS

ADMIN

PLANT
(MI)

PLANT
(OTHER)

REPORT

In this report PLANT or ADMIN can view the impacts of a SINGLE RECIPE of SANITARY or compare the impact of more recipe of SANITARY.

ONLY the VALIDATE DOCUMENT CAN BE VIEW in THE SELECT TO ASSEMBLY THE SANITARY

FUNCTION:

MULTISELECT DOCUMENT -> permits the selection of one or more documents in order to compare their results

ICON GRAPH -> click on the icon it is possible to view the histogram chart (default graph is related to GWP indicator).

The available indicators are:

- GWP
- USE OF SECONDARY MATERIAL
- RENEWABLE ENERGY CONSUMPTION
- NON RENEWABLE ENERGY CONSUMPTION
- HAZARDOUS WASTE
- NOT HAZARDOUS WASTE

LOGO
SANITSER

Home

Data entry

Report

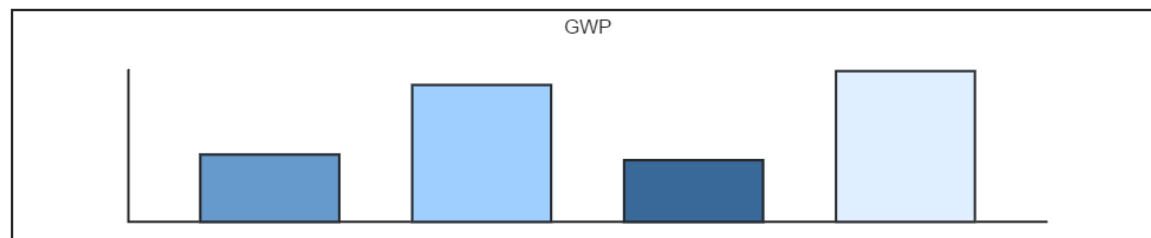
Sanitary

REPORT - sanitary

Results per UNIT

SANTARY 1

MULTISELECT
il PLANT seleziona una o piu' documenti su cui
visualizzare il report



GRAPH	INDICATOR	sanitary 1	sanitary2	sanitary 3	sanitary n.
	GWP [kg co2]				
	USE OF SECONDARY MATERIAL [kg]				
	RENEWABLE ENERGY CONSUMPTION [MJ]				
	NON RENEWABLE ENERGY CONSUMPTION [MJ]				
	HAZARDOUS WASTE [kg]				
	NOT HAZARDOUS WASTE [kg]				

HOME PAGE - ADMIN

ADMIN

PLANT
(MI)

PLANT
(OTHER)

The ADMIN HOME PAGE has 3 functional boxes

1. **OPEN DOCUMENT:** box with button NEW DOCUMENT
2. **SANITARY NUMBER:** box containing a table from which you can view the number of sanitary composed and click on view model.
3. **DOCUMENTS:** box containing a table from which you can edit or view documents realized by all the users. (**VIEW and EDIT: functions applied to every documents**)

LOGO
SANITSER

Home

Create sanitary ware

Report

User management

Open new document

New document

SANITARY NUMBER : 4

NUMBER	DATE	VIEW MODEL
sanitary1	28/09/2015	Link
sanitary2	28/09/2015	Link
sanitary3	01/10/2015	Link
sanitary4	01/10/2015	Link

IL QUESTIONARIO AVRA' 4 STATI:

OPEN - questionario aperto

SENT - questionario compilato e inviato. Modificabile ed editabile solo dall'admin

VALIDATE - questionario validato e non piu' modificabile

AUTORIZZAZIONI

L'admin visiona e edita tutti documenti direttamente dalla home page; nel momento in cui clicca sul tasto "edit" si apre la schermata del "CHECK DOCUMENT" - vedi mockup dedicato

Documents

PLANT	DOCUMENT	PERIOD	STATUS	VIEW	EDIT
<input type="text" value="filter"/>	<input type="text" value="filter"/>	<input type="text" value="filter"/>	<input type="text" value="filter"/>		
Minerali ind.	feldspati	01/01/14 - 30/09/14	VALIDATE		
Gemica	smalto 1	01/01/14 - 30/09/14	OPEN		
Setec	impasto ceramico 3	01/01/15 - 30/09/15	SENT		

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DOCUMENT – CHECK/EDIT - ADMIN

ADMIN

PLANT
(MI)

PLANT
(OTHER)

CHECK DOCUMENT (box document)

The ADMINISTRATOR can **edit** by himself the document or **check** and **send** an alert to the PLANT.

FUNCTION:

EDIT-> Edit document is **always** possible.

ADMIN ALERT-> Per each question is possible to insert an alert flagging the alert button

SEND ALERT-> permits to register every alerts added and send an email per each alert (with alert text) and change the status of questionnaire in OPEN.

VALIDATE-> change the questionnaire status in VALIDATE

The name of the documents becomes a new row in a table of the DATABASE.

EDIT from PLANT is not possible.
EDIT form ADMINISTRATOR is still possible

CANCEL->cancel the data not saved

LOGO
SANITSER

Home Create sanitary ware Report User management

Check document - "NAME OF THE OPEN DOCUMENT"

REGISTRY MATERIALS ENERGY CONSUMPTION EMISSIONS WASTE

QUESTION	amount	uom	admin alert	transport
CAOLINO	1500			
QUARZO	1500		<input checked="" type="checkbox"/> alert	
SILICE	1500			

SAVE Questo tasto permette di editare il questionario, una volta aperto da parte dell'admin

VALIDATE Questo tasto permette di validare il questionario, i cui dati e risultati potranno essere usati nel database

CANCEL

ADMIN ALERT : FLEGGANDO IL CHECK SI APRE IL CAMPO NOTE PER INSERIRE UN COMMENTO.

NEL CAMPO info compare un'iconcina che ricorda che è stato inserito un commento. Cliccandola, lo si visualizza.

ADMIN :note dell'administrator

insert reset

% material	truck (km)	rail (km)	ship (km)
95	100		
5	0	500	

save close

CREATE SANITARY WARE - ADMIN

ADMIN

PLANT
(MI)

PLANT
(OTHER)

ASSEMBLY SANITARY

In this section The ADMINISTRATOR assembles the sanitary model

ONLY the VALIDATE DOCUMENT CAN BE USED TO ASSEMBLY THE SANITARY

FUNCTION:

- INSERT the SANITARY WARE NAME
- INSERT a DESCRIPTION (optional)
- SELECT the SLIP, GLAZE and PILOT PLANT(PROCESS) document.
- INSERT for each document an AMOUNT
- INSERT an AMOUNT for FINISHED SANITARY (**Udm must to be checked with MI**)
- ASSEMBLY -> save the sanitary's recipe in the list of sanitary (home page)

LOGO
SANITSER

Home

Create sanitary ware

Report

User management

Assembly sanitary

L'administratore assembla i singoli processi VALIDATI

Name

Data collection 1st semester 2015

Finished sanitary

AMOUNT

pz

Da valutare con i partner qual è l'unità di riferimento per i sanitari

Description: (OPTIONAL)

Lorem ipsum dolor sit amet, maiores ornare ac fermentum, imperdiet ut vivamus a, nam lectus at nunc. Quam euismod sem, semper ut potenti pellentesque quisque.

Select:

amount

Uom

Slip

10

Kg

Glaze

7

Kg

Pilot plant

1

Kg

I processi che compaiono nella tendina sono solo quelli VALIDATI

ASSEMBLY

Salva la ricetta del sanitario e la inserisce nella lista dei documenti "DOCUMENTS"

REPORT – SANITARY PHASE - ADMIN

ADMIN

PLANT
(MI)

PLANT
(OTHER)

REPORT – COMPARING SANITARY PHASES

In this report ADMIN can compare impact (using specific indicator) per phase and per sanitary ware.

MULTISELECT drop-down menu permits to chose one or more sanitary together.

SELECT drop-down menu permits to chose the indicator

Indicator chosen (using the SELECT) will be displayed in the table and histogram chart per all the sanitary ware chosen (using the MULTISELECT)

FUNCTION:

MULTISELECT SANITARY -> select sanitary for which want to compare the results

SELECT INDICATOR -> select indicator that you want to display and compare.

LOGO
SANITSER

Home

Create sanitary ware

Report

User management

Sanitary

Sanitary phase

Comparing sanitary phases

Results per UNIT

SANTARY 1

GWP

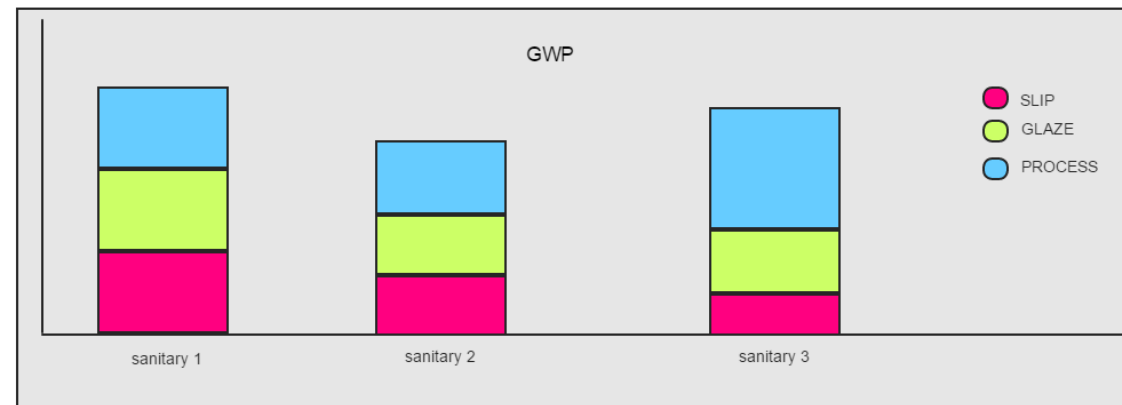
MULTISELECT

L'admin seleziona una o piu' documenti relativi al sanitary per cui visualizzare il report

SELECT

L'admin seleziona l'indicatore per cui visualizzare il confronto tra i sanitari precedentemente scelti

PHASES	sanitary 1	sanitary2	sanitary 3	sanitary n.
IMPASTO				
SMALTO				
PROCESSO				



USER MANAGEMENT - ADMIN

ADMIN

PLANT
(MI)

PLANT
(OTHER)

USER MANAGEMENT

In this section ADMIN can visualize users registered in the tool.

FUNCTION:

EDIT -> click on icon can edit the user's credential

CREATE NEW USER -> lets the ADMIN create new user

LOGO
SANITSER

Home

Create sanitary ware

Report

User management

User Management

EDIT UTENTE

ROLE	USERNAME	PLANT	EMail	NAME	SURNAME	EDIT
PLANT1	MinIND	Minerali Industriali	inof@min_ind.it	DANIELA	TABACCHI	
ADMIN	StudioLCE	Life cycle engineering	filareto@studiolce	it. ASSUNTA	FILARETO	

NEW USER

← Bottone che porta alla schermata EDIT UTENTE. Nel caso di nuovo utente i campi saranno da compilare.

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CREATE /EDIT USER - ADMIN

ADMIN

PLANT
(MI)

PLANT
(OTHER)

CREATE /EDIT USER

In this SECTION ADMIN can edit the user's credential.

FUNCTION:

ROLE -> select a typer of user.

USERNAME-> give a unique username to the user.

PLANT -> combines user with a PLANT.

Name, SURNAME -> insert a Name and Surname.

EMAIL -> Insert a email adress (Unique).

PASSWORD -> Insert a password

LINK TO PRODUCTION PROCESS PHASE -> assign production process to proper users (e.g. SETEC to Slip production).

LOGO
SANITSER

Home

Create sanitary ware

Report

User management

EDIT USER

ROLE: ADMINISTRATOR

LINK TO PROCESS: GLAZE

USERNAME: Some Text

PLANT: STUDIOLCE

NAME: Some Text

SURNAME: Some Text

email: Some Text

password: Some Text

SAVE

RESET

PUNTI DA GESTIRE CON I PARTNER

DUBBI e PUNTI APERTI:

SLIDE 8 -> CHECK the UdM of the RECIPE

SLIDE 9-10-11 -> CHECK the control before PLANT SENDING a questionnaire

SLIDE 16 -> CHECK the UdM of the FINISHED SANITARY