asteks®

PRINTING ROLLERS

ROLLER WASHING AGENTS

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washmatic®
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Asteks has successfully carried its experience combined with modern technology in line with its defined principles. Asteks's main principle is to achieve highest customer satisfaction and our aim is to make Turkey a global brand for the printing rollers via our customers' supports.

Asteks has been manufacturing for the printing sector since 1998 and serving textile sector together with printing sector for the last 38 years. Our factory also manufactures aprons and cots that are used in textile string factories. These products are manufactured by 25 companies that applie high Technologies all over the world. Asteks is within the top three companies with regard to quality listing.

In the light of the know how acquired from Switzerland in 1997, the roller covering department has been enlarged and started to roller lining services for the printing sector.

The production and manufacture process is carried out in our factory in İstanbul site that consists of an open area of 11.000 m^2 and covered area of 6.000 m^2. Our factory is servicing the sector with a work force of 150 people, 9 of which are engineers, 20 of which are technicians. As well as increasing our existence in Turkish market via customer satisfaction and marketing; we also export our services to Germany, Azerbaijan, Bulgaria, Armenia, Kosovo, and Kazakhstan. Besides we also export to 35 other countries with regard to textile sector.

MANUFACTURING PROCESS

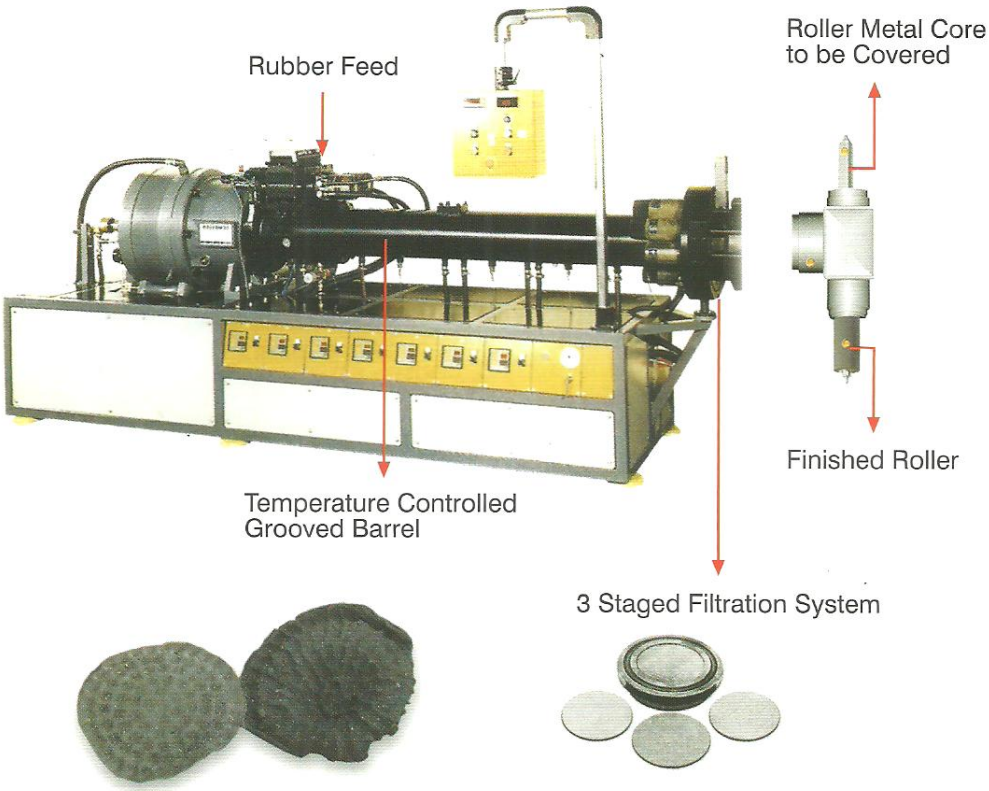
Our main principles

1. Application of modern technology
2. Raw material standards
3. Human resources
4. User evaluations and research & development

1. Application of modern technology

Roller manucturing with "Extrusion Technology"

In extrusion technology, extrusion machinery applies a homogeneous mixture process to the rubber campound fed from the feeder unit by the temperature controlled grooved barrel and then process it through a 3 staged filtration system.



The foreign structures and residues separated via filtration

The rubber is then covered on the roller on the "T head" unit completely hand free and without any folding overs. The air within the rubber is sucked out via a vacuum system. All the micro foreign substances and residues are separated via 3 staged filters all with different dimensioned pores. A smooth and even surface is achieved on the rollers surface which is an important factor for achieving high printing quality. The risk of air bubbles is minimized by application of vacuum system. Dentures don't form during printing process. As a complete and non folding covering system is applied metal-rubber adhesion problems do not occur. Rubber is filtered by 3 staged filtration system. This enables a smooth and even surface on the roller. The homogeneity and mixture quality of the compound increases and homogenous performance on all surfaces are achieved as a result of the high pressure applied during the extrusion system.
As the manufacturing of the rollers varies according to the core diameters, manufacturing process with extrusion method is more costly compared to classical systems.

Traditional system roller manufacturing methods

There are two traditional roller covering methods that have been widely used and still applied by manufacturers

1. Roller manufacturing with traditional system

In traditional system, rubber is formed into sheet layers by calendering and the roller is covered by rolling this rubber sheet over the metal core.

2. Other traditional methods;

Rubber is wrapped over the metal core in forms of pipe spirals

The frequently experienced problems with rollers manufactured with traditional systems and the reasons of these problems

1- The air trapped within the rubber layers during the manufacturing process can not be completed extracted. Due to the pressure applied during the printing process, trapped air surfaces out and cause dents on the roller surface.

2- The excessive hand contact with the roller during manufacturing process results in decrease in stickability of the rubber on to the metal. This results in non sticking of the rubber on the sides or sliding of the rubber from the metal.

3- Without filtration process the residues with in the rubber cause irregularities on the roller surface.

Advantages of the printing rollers manufactured with extrusion technology

1. Through vacuuming, the risk of remaining air-bubbles in the rubber mass is minimized.
2. A non folding and non attachment system is applied, the problem in metal-rubber adhesion is eliminated.
3. Rubber is put through a 3 stage filter system and this enables to remove all the foreign substances and therefore provides a smooth surface.
4. The homogeneity and mixture quality of the compound increase and homogenous performance on all surfaces is achieved as a result of the high pressure applied during the extrusion system.
5. As the manufacturing of the rollers varies according to the core diameters, manufacturing process with extrusion method is more costly compared to classical systems. But its advantages and longer life span make up for these extra costs.

2. Raw material standards

Long term contracts have to be made with the certified raw material suppliers in order to achieve continuity in the quality of raw material to be used. A rubber mixture consists of 14-15 various raw materials. The standardization of raw material can better be realised bearing in mind that there are hundreds of raw material suppliers, supplying thousands of products.




All the raw materials are tested in line with ISO 9001:2000 prior to their application in order to achieve continuity of the standards. The rubber mixtures are produced within our factory and ready made rubber compounds are not purchased from other countries. This enables the usage of freshly produced mixtures and prevents the problems to be faced due to usage of stale mixtures.

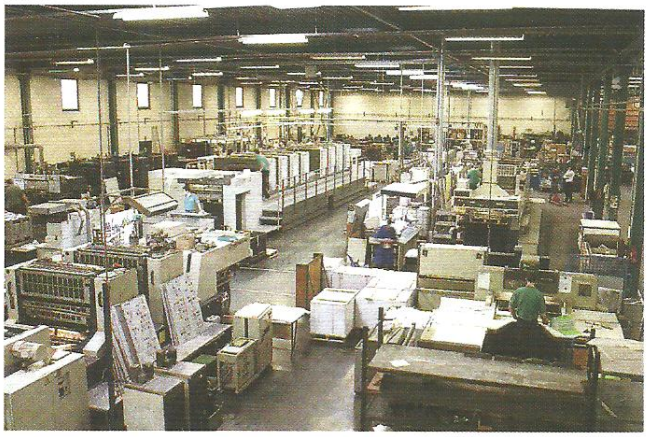
3. Human resources

The choice of raw material, mixture rates and sequences and their harmony is important for achieving the required rubber formulation. Therefore professionals with adequate education and experience background are required.

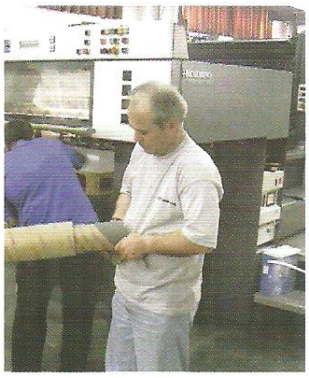

As Asteks, one of our major principles is to have relevant human resources. Our team consists of 9 engineers, 20 technicians and 150 workers whose main aim to provide the right solutions to our customer's requirements

4. User Evaluations and Research & Development

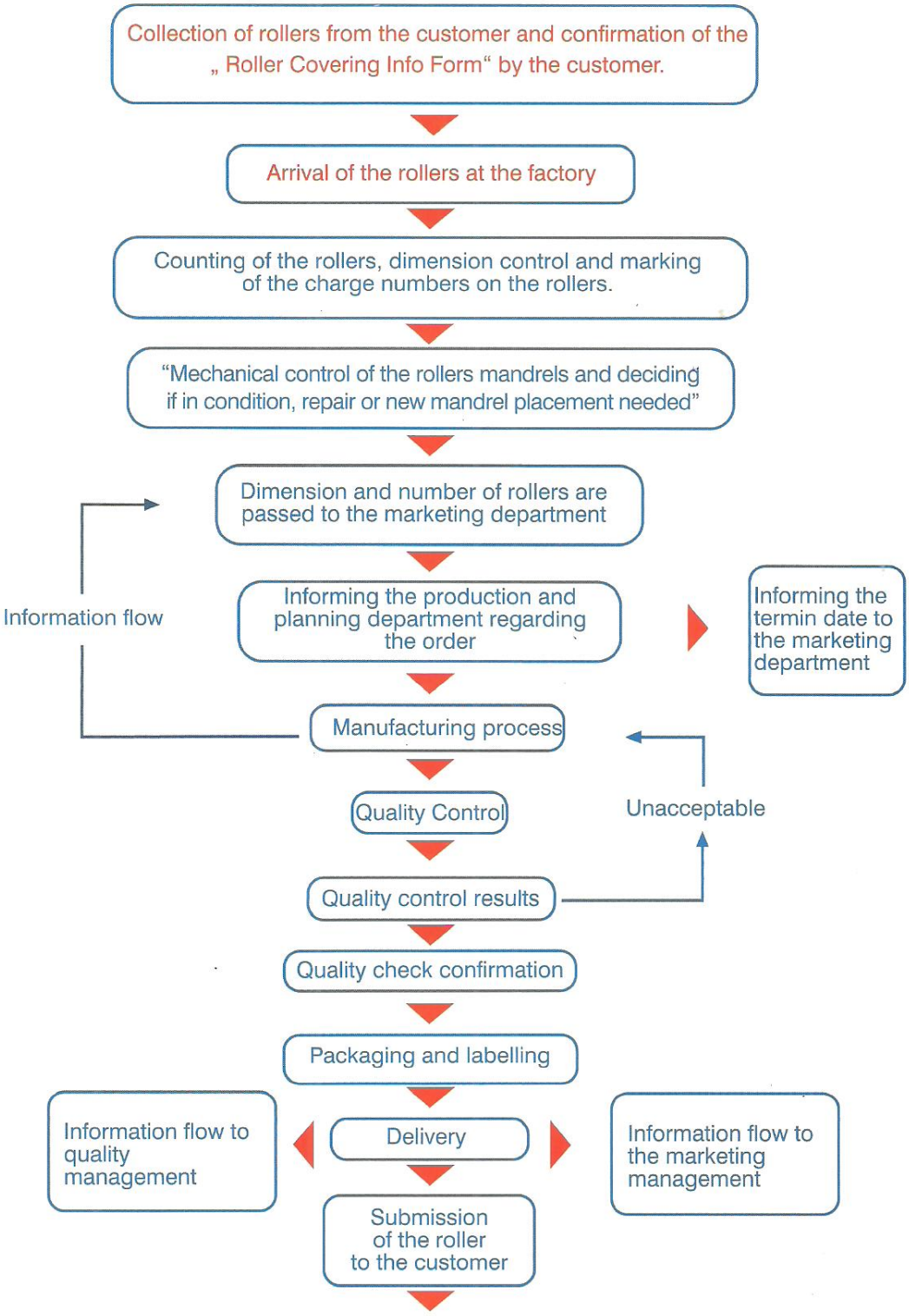
Development of a new type of rubber mixture is a very time consuming study as it requires not only laboratory work but also a continuous observation of the materials performance in the sector it is used.



User evaluations and research development studies have to be carried out in coordination over a long period of time. The effect of print types, machinery types, and paper types used during printing with various rollers have to be observed. Customer feedbacks are passed onto our manufacturing and research & development departments and the studies and manufacturing process are designed according to customer requirements.



Flow Chart for Printing Rollers

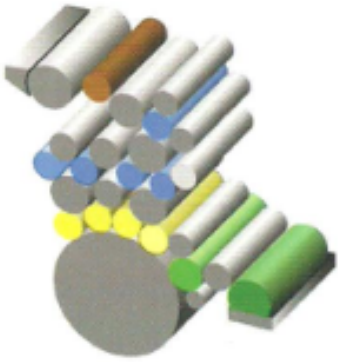


3. TECHNICAL INFORMATION

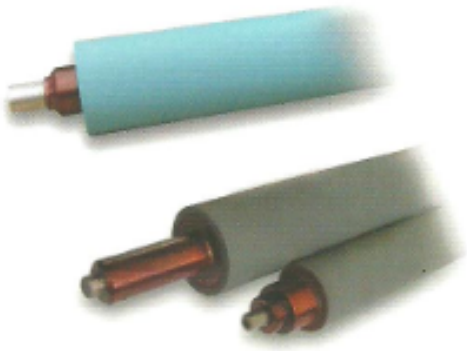
Rollers according to printing systems

Sheet offset

The rollers to be used for sheet offset printing systems are manufactured according to the offset printing requirements. The technical parameters for rubber rollers to be used in offset printing systems as identified by printing machine manufacturers are taken as basis. Therefore the technical properties of the rubber rollers found in every make and model are recorded.



Rubbers with suitable properties are used according to the ink type(conventional, mixed, UV, Hybrid).

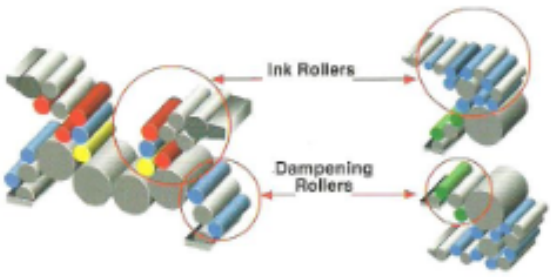


HEIDELBERG KBA Koenig & Bauer AG MAN ROLAND KOMORI

RYOBI MITSUBISHI LITHOGRAPHIC PRESSES Gestetner ADAST

Webb offset

The webb rollers are manufactured as heat and pressure resistant due to high operational speeds. They carry properties suitable for the ink and water transfer.



HEIDELBERG
KBA Koenig & Bauer AG
GOSS | INTERNATIONAL
Tensor
KOMORI
MAN ROLAND

Label print

The rollers used for label prints are UV resistant and manufactured with accurate diameter and surface properties. Use of suitable wash solvent enables long operation periods.

gallus
IWASAKI

Other rollers

Adhesive
Varnishes (Dispersion, UV)
Ebonite

Roller sales system

1. From stock, selling together with metal core

Covering on new mandrel and quality check completed.

GESTETNER 211 / 311
GESTETNER 411
GESTETNER 213 / 313
GESTETNER 413

GTO 46	32x46
GTO 52	36x52
KOR	40x57
KORD 62	46x62
KORD 64	46x64
KORS	
MO	48x65

SORM	52x72	Old Model System with water – (below O/S series 523-897)
SORM	52x72	Old Model System with alcohol
SORM	52x74	New Model System with water (above N/S series 523-897)
SORM	52x74	New Model System with alcohol

SM 74	52x74
CD 102	72x102
ROLAND 200	52x74
ROLAND 700	72x102
COMOR• L-28	52x74
COMOR• L-40	72x102

* *The other makes and brands widely used within the sector are all kept in stock. The models that are not found in the storage are manufactured in a short period of time*

2. Covering on customer's metal core

The worn out rubber on the customer's mandrel is stripped of and new rubber is covered on the mandrel after the mandrel is mechanically adjusted. This is generally preferred for the medium and large sized print machines due to the high mandrel costs.

3. Metal core production

Within our machining unit, roller mandrel with orijinal weight and accuracy is manufactured after choosing the suitable material

Roller applications according to the ink types

Rollers with various properties are required for application of various ink types such as conventional, UV, Hybrid, etc with various properties. Choice of rubber to be used for the type ink to be applied increases the performance of the operation and usage life of the roller. Rollers are chosen according to 3 different ink group applications;

1. **Application of Conventional Ink**
2. **Application of UV Ink**
3. **Application of Mixed type Ink**

If the operation is to be % 20 UV, % 80 conventional
then Conventionel Type
If the operation to be › % 20 Uv (ie % 50 UV, %50 conventional)
then Mixed Type (UV-MIX-371)

1. Application of Conventional Ink

As the conventional inks are oil based, the rubber to be used shall be oil resistant. Conventional ink is widely used in offset printing systems. Usage of suitable wash solvents extends the usage life of the roller.

2. Application of UV Inks

As UV inks consist acrilite, rubber with different structural properties is required.

Wash solvents that will not damage the rubber's structure shall be applied for cleaning of UV ink.

3. Application of Mixed Type Inks

As both UV and conventional inks are applied on the same machine, there are two important parameters to be considered.

(UV MIX- 371)

Firstly: Ratio of UV usage. If;
- %80 conventional, 20 UV =>conventional rollers can be used.
- If greater than % 20 UV => mixed type roller shall be used.
(UV MIX –371)

Secondly : Usage of wash solvent that affects the roller the least. Some of the UV solvents can cause swelling, softening, aggravation due to the agressive structure of the solvent.

Note:
The existing conditions shall be considered for determining the operation rates. For instance; if the UV usage rate will not exceed % 20, mixed rollers shall be chosen for just in case purposes. The roller type to be chosen according to the ink usage rates affects the performance of the application.

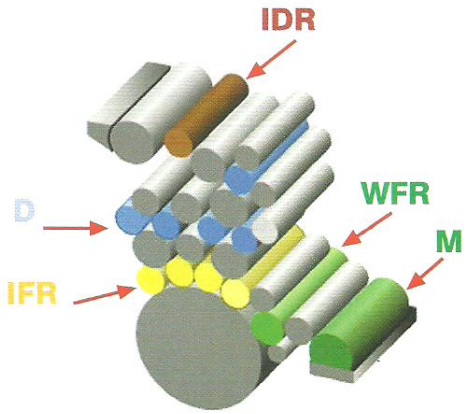
Roller applications according to usage areas

Ink Rollers

Ink ductor roller **IDR**
Distributor Roller **D**
Ink form roller **IFR**

Dampening Rollers

Water form roller **WFR**
Metering Roller **M**



These rubber covered rollers are manufactured according to the requirements of their application places. The rubber type, hardness, surface smoothness, roller weight (Ra) can vary during the manufacturing process. Also different machine manufacturers can recommend different hardness grades for the rollers to be applied in similar locations.
These differences and requirements for various customers are all kept recorded and rollers are manufactured according these recorded criteria.

Dampening Rollers:

They enable homogenous spreading of the dampening fluid on the form surface. Their hardness grade can vary for different machine models. The hydrophilic rubber structure, surface smoothness and hardness of the rubber shall identify the results. Asteks manufactures these rollers in accordance with the requirements identified.

Importance of the roller cleaning solvents

The wash solvents applied for ink washing play an important role on the performance and usage life of the roller.

Example

Complaints such as swelling, softening, polishing etc were experienced with one specific customer.

As all the rollers are manufatured according to **ISO 9001:2000 Quality Assurance System**, we were sure that all the rollers manufactured would have the same quality. Therefore we investigated the ink and wash solvents applied on rollers by this specific customer.

The results showed that the swelling was due to the roller wash solvents used. For instance brand A solvent caused 0.5% swelling effect where as brand B solvent caused 40% swelling effect. The rollers washed with brand B solvent were found to have premature wearing and various performance problems.

SECONDARY MATERIALS

CONVENTIONAL INK WASH SOLVENT KV 11

KV11

USAGE AREA

CONVENTIONAL

It can safely be used for daily cleaning of the rollers and blanket in sheet and webb offset systems. KV 11 is an odorless, health and enviromentally friendly effective wash solvent for cleaning of conventional inks.

CHARACTERISTICS

- Effectiveness in cleaning of conventional ink. Easily removes the ink from the rollers surface.
- High polishing temprature AIII (65° C), enables safe usage in drying systems.
- Its contents can easily be dissolved in nature with pH value 7, it is health and enviromentally safe.
- It is suitable for automatic and manuel cleaning systems.
- It is colorless. It is used as concentrated and water can be added if required

APPLICATION

ROLLER

Automatic Cleaning :
Applied as indicated in the machine's automatic cleaning programme.

Manuel Cleaning :
It can be either sprayed on to the roller or can be applied with a cloth.

RUBBER/ Blanket
Washmatic KV 11 can be applied with a damp cloth by removing the ink and paper dust of the roller. It can be mixed with water if required.

Storage:
To be stored between min -10 °C and 35 °C max.

Packing :
25 lt plastic barrel
200 lt plastic barrel

Caution Note: Do not use on rollers manufactured for 100% UV ink application.

UV INK WASH SOLVENT UV22

UV22

UV

USAGE AREA

It is produced to wash UV ink applied in sheet offset and label printing systems. It does not harm the roller structure and can be appllied safely.

CHARACTERISTICS

- Effective cleaning of UV ink on the roller.
- Suitable for automatic and manuel cleaning systems.
- Colorless. Can be used as concentrated or water mixed.
- Odorless

APPLICATION

ROLLER

Automatic Cleaning :
Applied as indicated in the machine's automatic cleaning programme.

Manuel Cleaning :
It can be either sprayed on to the roller or can be applied with a cloth.

RUBBER/ Blanket

Washmatic UV 22 can be applied with a damp cloth by removing the ink and paper dust of the roller. It can be mixed with water if required.

Caution Note: rinse off the surface with water after application.

Storage:
To be stored between min -10 °C and 35 °C max.

Packing :

25 lt plastic barrel

Caution Note: Do not use on rollers manufactured for 100% UV ink application.

DAMPENING ROLLER WASH SOLVENT NS 44

NS 44

USAGE AREA

It can safely be used for daily cleaning of the Dampening Rollers in sheet, webb offset and label systems.

CHARACTERISTICS

- Easily cleaning and drying property
- Less harmfull on the roller compared to supereguma.

APPLICATION

It can be either sprayed on to the roller or can be applied with a cloth.

Storage:

To be stored between min -10 °C and 35 °C max.

Packing :

25 lt plastic barrel

ROLLER SURFACE MATTING AGENT MM55

MM55

USAGE AREA

It is used for removing the ink residues on the roller in sheet, webb offset, label printing systems. It delays the polishing effect by opening the surface pores on the rubber.

CHARACTERISTICS

- Highly effective in removing of the ink residues, paper dust, etc from the roller pores
- It completely reaches the pores due to its slow evaporation property.
- It can be used as required or on montly basis.

Regular application delays the shining of surface.

APPLICATION

1. It can be used as required or on montly basis.
   Regular application delays the shining of surface..
2. Apply **MM 55** on the roller and keep the rollers on standby for 10-15 min.
3. Rinse off with water
4. Rewash with **Washmatic KV 11.**

Caution Note: rinse off the surface with water after application of **MM 55.**

Storage:

To be stored between min -10 °C and 35 °C max.

Packing :

1 lt plastic barrel

CALCIUM DEGLAZER KC 33

KC 33

USAGE AREA

The hardness of the water applied, mineral particles within ink, paper, etc cause blocking of the roller surface pores with lime residues and result in shining of the surface.

KC 33 Calcium Deglazer can be used to unblock the pores and cleaning of the lime that can not be removed with washing solvents.

CHARACTERISTICS

- Removes the lime layer and increases surface elasticity of the roller surface. Eases the transfer of water and ink.
- Decreases shining effect on the surface of the humidifying rollers by unblocking the pores. Results in increased print quality by easing the transfer of water. Regular application (once a month) delays surface shining caused due to water hardness and paper dust.

APPLICATION

1. Clean the ink on the roller with washmatic **KV11.**
2. Apply **KC 33** on the roller and keep the rollers on standby for 10-15 min.
3. Rinse off with water
4. Rewash with **Washmatic KV 11.**

Storage:

Store at dry and humid free places.

Packing :

1lt plastic barrel.

asteks®

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