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## 1. Areas of application

ContiClean® A-H is a conveyor belt designed especially for carrying sticky materials. In all applications where conventional conveyor belts need **a lot** of cleaning, or where heavy soiling occurs, especially underneath the conveyor, the unique anti-stick properties of ContiClean® A-H can be used effectively.

Previous use:

- Concrete additions
- Clay
- Clay transport with gripping/twin-belt conveyor
- Compost
- Corn starch
- Desulphurised gypsum
- Feed additives
- Fertilizer
- Iron ore slurry
- Lignite
- Lime/sand mixture
- Paper recycling rejects
- Plastics recycling
- Pyrites (sulphuric acid)
- Quartz sand
- Recycling products
- Titanium dioxide
- Wet ash (moistened dry ash)

## 2. Residual moisture on the conveyor belt

The adhesion of damp materials on ContiClean® A-H belts is different from what experienced with conventional conveyor belts.

The belt can be cleaned **very well** even when the residual moisture from the material is high.

If the material is dry, there are limitations:

If dust arises or when conveying fine material, material adheres to the belt surface and it is tough to clean it, even with the recommended cleaning systems. But even under those conditions it is possible to increase the cleaning effect.

Example:

In the cement and lime/sand industry, ContiClean® A-H is used for dry products as well. The cleaning results are similar to when rubber conveyor belts are used with hard metal scrapers.

Advantage:

Thanks to the soft cleaning with rubber scrapers, ContiClean® A-H achieved a much longer belt life (in one extreme case, the belt even lasted 4-times as long).

Residual moisture	Example of material	Belt cleaning
Dust	Lime/sand mixture, synthetic fertilizer, earthenware	Rotating brush rubber-combo scraper
up to 20%	Sand, desulphurised gypsum, compost, wet ash	rubber-combo scraper PU combo scraper
More than 20%	Clear sludge, water/sand mixture, paper recycling rejects	PU combo scraper

### 3. Cleaning of belts conveying very sticky materials

#### 3.1 General cleaning problems for all conveyor belts

- Too "**soft**" or inadequately maintained scrapers do not clean the belt surface sufficiently.  
The consequences are:
  - ⇒ Material gets into the return run
  - ⇒ Idlers below the belt get soiled and hence damage the belt etc.
- Too "**hard**" or inadequately maintained scrapers prematurely wear the top face of the conveyor belt
  - ⇒ Shorter service life
  - ⇒ Unexpected belt failure without warning
- Scraped-off material builds up between belt and scraper
  - ⇒ Depending on the type of material, once it has dried out, an extremely abrasive material builds up and can easily damage the belt surface or destroy the belt
- Material gets caught between the hard scraper and the belt
  - ⇒ Belt can be cut and damaged longitudinally.

#### 3.2 Philosophy of cleaning ContiClean® A-H belts

ContiClean® A-H is an **ANTI-STICK** but **NOT A SELF-CLEANING CONVEYOR BELT**.

**Previous philosophy on removing very sticky materials caked on belts:**

- a) Clean the belts by use of considerable force applied at high contact pressure
- b) Clean the belts by use of considerable force exerted by scrapers with short projecting lengths (equal to the material thickness)
- c) Clean the belts with hard scrapers (metal bars)

### **Philosophy on removing very sticky materials caked on ContiClean® A-H belts:**

For ContiClean® A-H belts the above cleaning philosophy may **not** be applied.

Regarding the points specified above, the following is appropriate for ContiClean® A-H belts:

Re. a) Cleaning with low force applied at low contact pressure

Re. b) Cleaning with low force exerted by scrapers with projecting lengths equal to 2 to 3 times the material thickness

Re. c) Scrapers made of metal, ceramics or hard plastic are not allowed. Together with the conveyed material, they could cause damage to the synthetic coating.

### **3.3 Cleaning ContiClean® A-H belts in the case of abrasive materials**

After they have been subjected to the scraping process, some materials – as a result of drying out and solidification – turn from a harmless material into a coarse and abrasive medium that can get firmly caked onto the cleaner bar (e.g. ash), causing damage to the belt surface. Two types of scrapers have been developed in attempt to avoid this caking.

1. A rubber-combo scraper with the A-H coating on both sides.
2. PU combo scraper consisting of two flexible plastic elements, a soft UP layer and an A-H coating

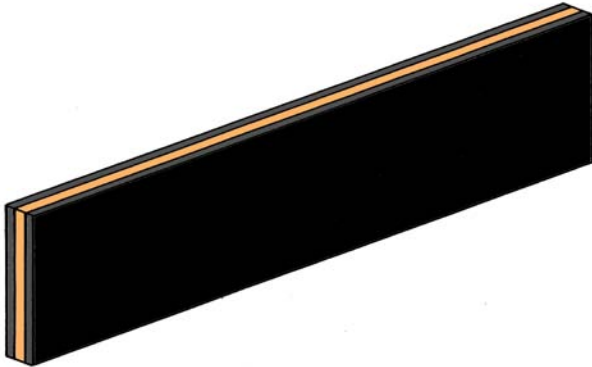
Both scrapers can be mounted in a simple scraper holding device (e.g. weight-loaded).

The rubber combo scraper is the simple version and is sufficient for most applications. Another advantage of the PU combo scraper is that the scraper mount is protected by skirting coated with A-H material. This prevents material from accumulating on the mounting bolts etc. If the moisture content is high (exceeding 20%) or if the material is really sticky, the relatively high contact pressure of the PU combo scraper is beneficial.

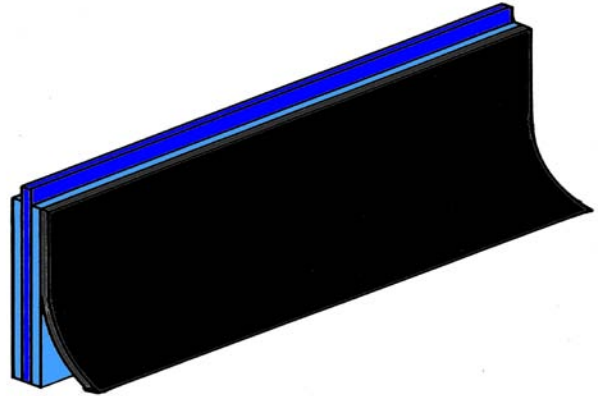
#### **Advantages of these scrapers:**

- Dry caking on the scrapers is avoided.
- Material between the belt and the scraper is pulled through (the elastic rubber material / the flexible PU scrapers give way).
- Gentle and effective removal of caking on the belt.
- Little maintenance required since practically no friction and wear between scraper and conveyor belt.

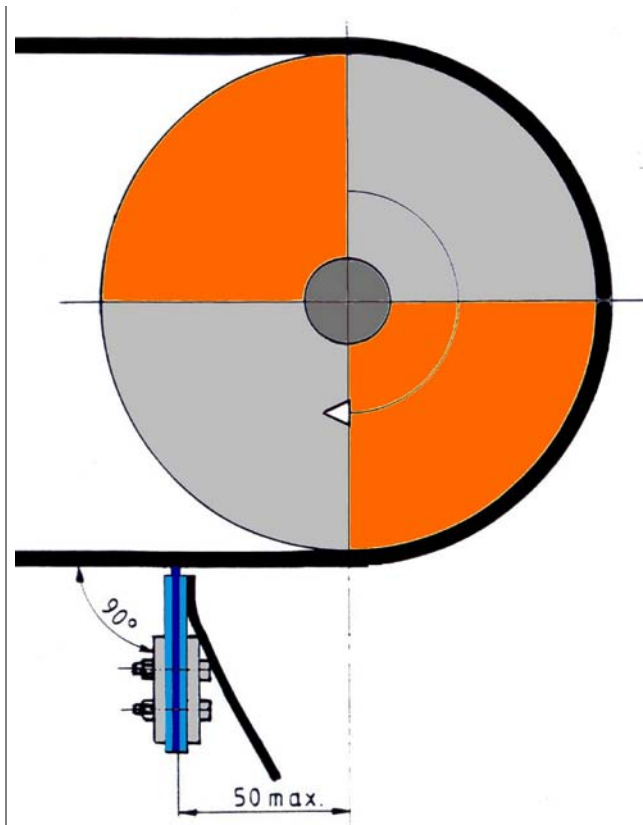
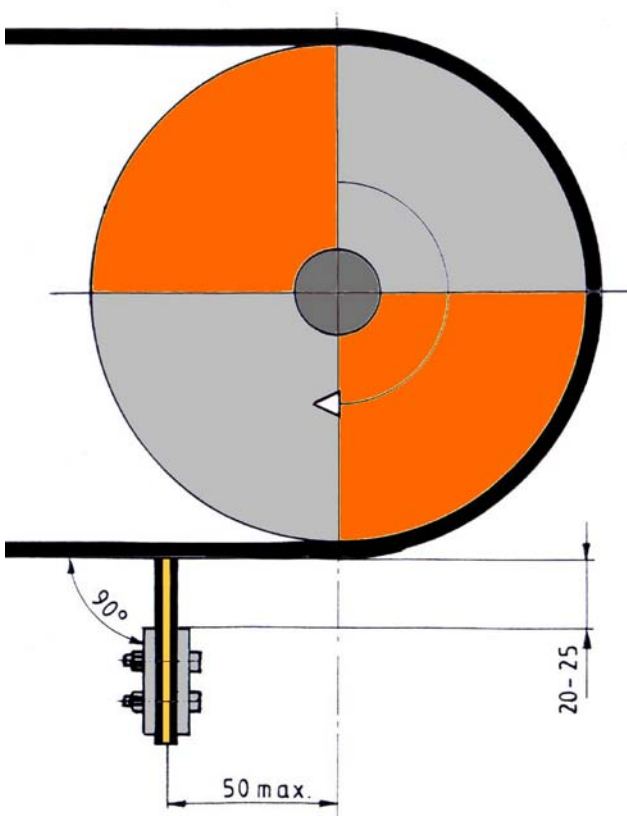
Rubber Combo Scraper  
 both sides  
 A-H coating



PU - Combo Scraper  
 one - or both sides  
 A-H coating



In order for the belt to be cleaned properly, the scraper must be positioned correctly (see drawing below).



## **4. Use of ContiClean® A-H belts**

### **"The ContiClean® A-H coating has a low friction coefficient"**

If the ContiClean® A-H is to replace a conventional conveyor belt, the following criteria must be checked for the application.

#### **4.1 Gradient of belt**

ContiClean® A-H is only **conditionally** suitable for inclined conveying. It is unfortunately not possible to theoretically calculate the highest feasible inclination angle. The maximum belt gradient is 10 degrees for numerous applications. Experience with different types of material is being gathered and some general information on specific applications is available on request. When deciding whether ContiClean® A-H could be suitable, it is often helpful to observe the performance of the conventional belt at the feed point:

- If the material rolls back when fed onto the belt or thereafter even on a conventional belt, the ContiClean® A-H belt should not be used.
- If the material stays still on the belt when fed onto it or during conveying, the ContiClean® A-H can be considered for the application.

#### **4.2 Feeding point**

The conditions for the material feed must be taken into account since it takes longer for the material to accelerate than on a conventional belt.

#### **4.3 Removing a stack of material**

- ContiClean® A-H is only conditionally suitable as a take-off belt.
- Practical testing of a proportioning belt in an asphalt mixing plant ran well, but based upon this testing it is not possible to state that the belt is suited for such applications in general.

#### **4.4 Minimum drum diameter**

To prevent the synthetic coating from becoming overstretched, the minimum drum diameters must be complied with. The appropriate dimensions are specified in the current ContiClean® A-H datasheet.

#### **4.5 Troughability**

The maximum trough angle must be complied with, especially for belts less than 650 mm wide. The appropriate trough angles are specified in the current ContiClean® A-H datasheet. For belt widths under 800 mm **and** changing material feeding points, lateral guide rollers are required.

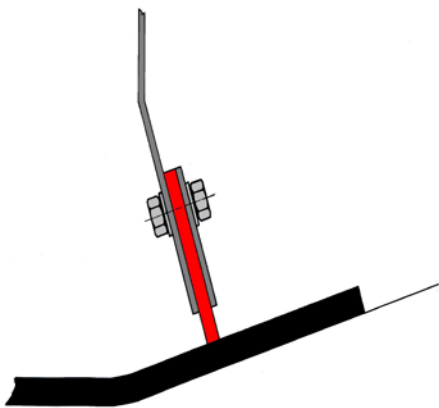
## 5. Side chutes

Conveyors that cause damage at the points where side chutes feed material onto conventional belts will also cause damage at those points on ContiClean® A-H belts. Using ContiClean® A-H does not solve this problem.

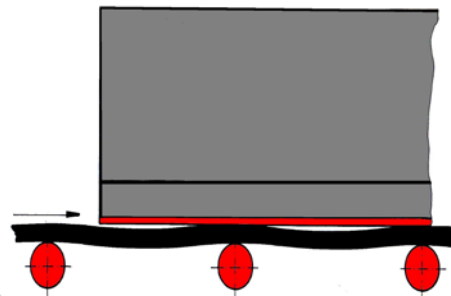
But the use of the **ContiClean® A-H coating in the area of the side skirt** can contribute to resolving this problem:

One of the main causes of longitudinal damage at the chute discharge point is the conveyed material itself. On inadequately designed conveyors, material can accumulate and become compressed underneath the chute, changing from a relatively harmless bulk material into a coarse and abrasive material which can rub on the belt when under great pressure.

This happens primarily in the case of a slightly overlapping longitudinal skirt positioned **perpendicular** to the belt. In unfavourable cases, such a skirt comes in direct rigid contact with the conveyor belt in the area of the idlers because of the shape of the skirt and belt. Due to the rigidity of the skirt, gaps form between the belt and the skirt where the belt sags between the idlers. Material can penetrate into these gaps, and the belt carries it along to the next idler. At this point the skirt in direct contact with the belt prevents the material from escaping beneath the skirt. A constant flow of new material being pushed along continues to add to the accumulation.

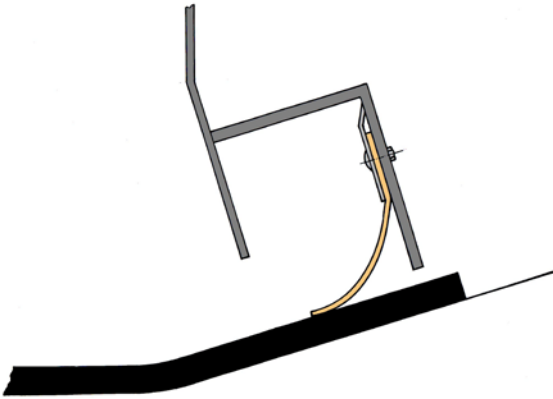


Perpendicular skirt



Direct contact between belt/skirt





Skirt with A-H coating

## Benefits

- The skirt can react flexibly to the sag at the idlers.
- The skirt has A-H-coating, so virtually no friction occurs between it and the conveyor belt.
- No excessive pressure is applied, but a springy sealing effect is ensured thanks to the flexibility of the rubber and the rigidity of the A-H coating
- The A-H coating allows no build-up of material between the conveyor belt and the skirt.
- The skirt can be replaced easily.

## Checklist

- The skirt must be mounted at 90 degree to the belt edge – this also applies to troughed conveyors (see illustration above)
- The basic concept of this sealing system has proved its worth.

## **6. Splicing techniques**

ContiClean® A-H conveyor belts can be made endless by hot vulcanization or cold splicing, the same as conventional belting.

## **7. Advantages**

- Significantly less soiling
- No expensive scrapers required
- Less maintenance of the "soft" scrapers required
- Cost savings thanks to minimization of cleaning
- Possible cost savings thanks to longer belt life
- Minimization of conveyor down times