

DR!PSTOP

Condensation control



PPA Congress
Ljubljana, 22.-23.10.2015

FILC



- Established in 1937
- Shareholding company
- 240+ employees
- 3 production locations

- ISO 9001 since 1993
- ISO 14001 since 2001

ISO 9001
ISO 14001

BUREAU VERITAS
Certification



ANTICONDENSE MEMBRANE **DR!PSTOP**[®] FOR METAL CONSTRUCTION

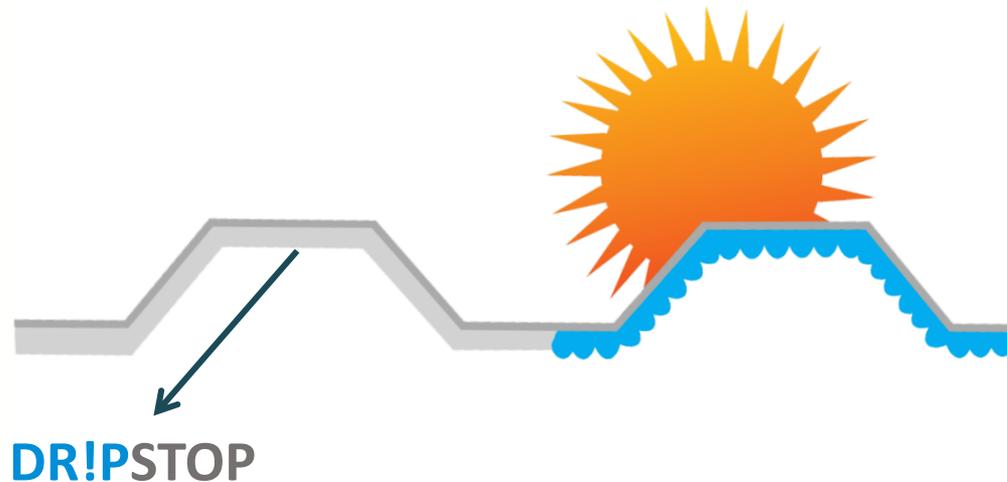
DR!PSTOP[®] is a different way of dealing with the problem of condensation on uninsulated metal roofs in a simpler, more economical way.

It is a self adhesive membrane applied to the metal sheet during a profiling process.



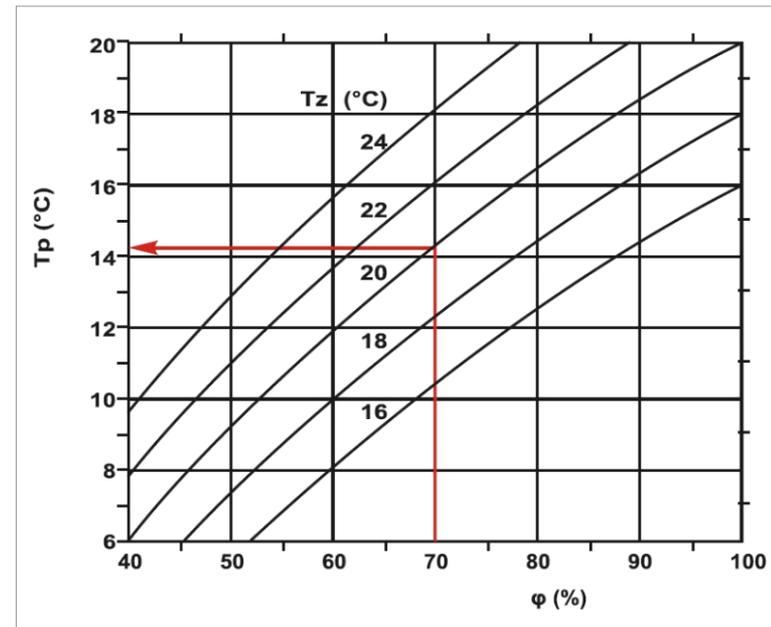
CONDENSATION

When the temperature and humidity conditions reach the dew point, moisture condenses on the underside of the untreated metal roof and forms droplets of water which can cause damage to the contents of the building below.



DEW POINT

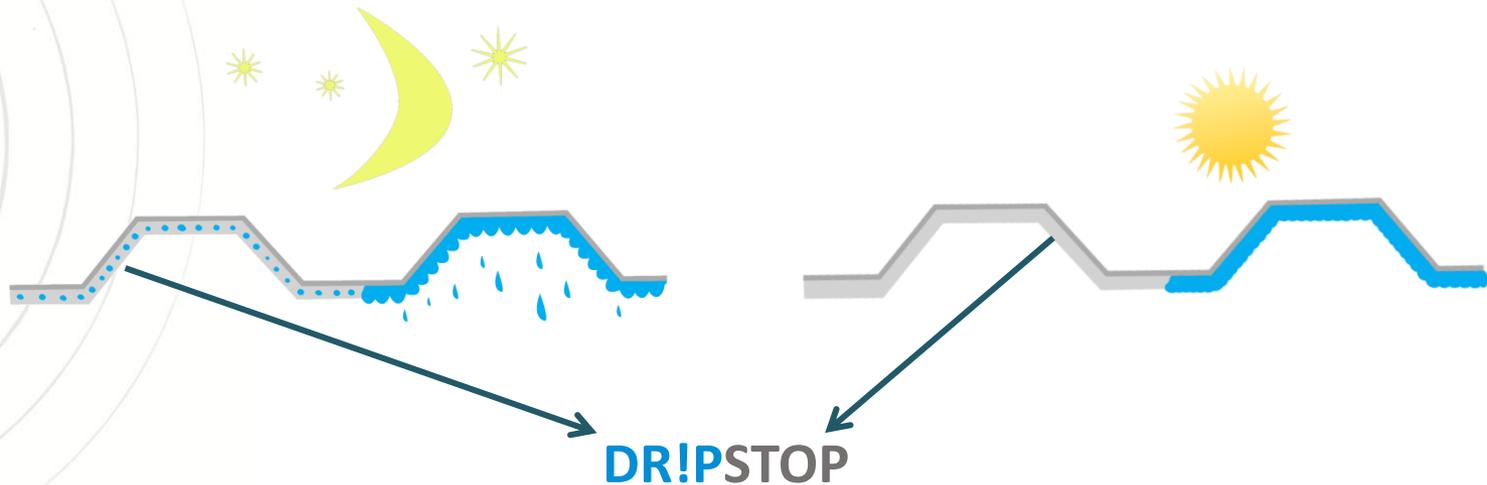
- **T_p** - dew point temperature [°C]
- **T_z** - air temperature [°C]
- **φ** - relative air humidity [%]



Graph shows that at the temperature of 20°C and relative humidity of 70%, the air holds the dew point temperature at 14.2°C.

SOLUTION

Roof panel with **DR!PSTOP**[®] applied provides a medium for trapping this moisture in the specially designed pockets formed in the membrane. **DR!PSTOP**[®] holds that moisture until conditions go back below the dew point, then the moisture simply evaporates back into the air.



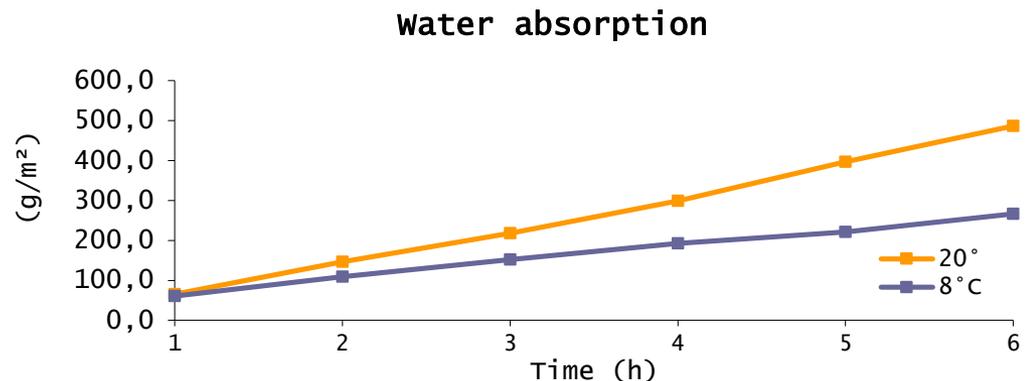
WATER ABSORPTION

How much water can **DR!PSTOP**[®] absorb? **Enough!**

- **Certificates:**

- Bureau Veritas Institute
- CSTB Institute
- Danish Technological Institute
- Internal test methods

INCLINATION	DR!PSTOP 110
0°	> 1.000 g
45°	> 800 g
90°	> 600 g



RESISTANCE & DURABILITY

- Excellent adhesion, long lifetime

Tear strenght (Adhesion)*¹	FTM 1 180°	N/25 mm	min 10
Tear strenght (Adhesion) after aging*¹	Internal regulation FD15	N/25 mm	Is improved

*¹ Nonwoven membrane on metal sheet.

- 10 years warranty
- 19 years experience on the market
- Real life aging tests in climatic test chamber
- Temperature resistance: -40°C~+80°C

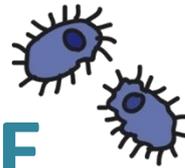
COMBUSTIBILITY

- **Combustibility A2-s1,d0 (EN 13501)**
 - Self extinguishable
 - No flaming droplets
 - Limited smoke production, no hazardous gases

A2 

ISO EN 13501-1

BACTERIA RESISTANCE



- Evaluation index 0 – no visible growth of microorganisms (DIN EN 14119:2003 –12)

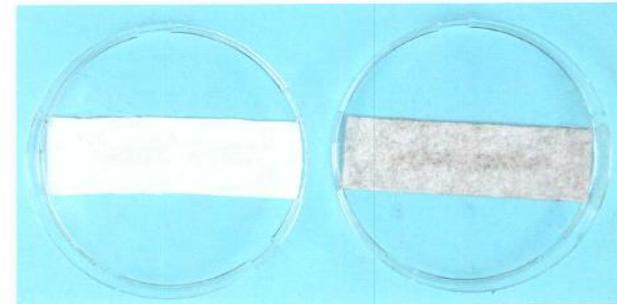


Figure 1: Control (left side) and test specimen (right side) at begin.

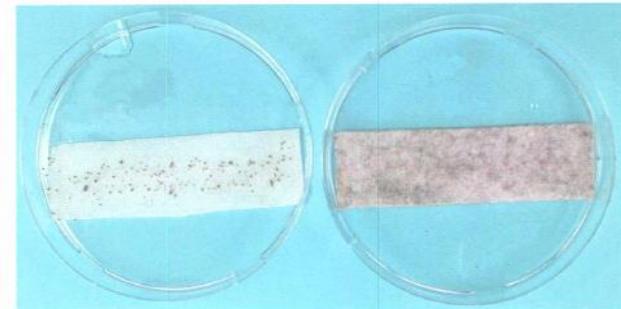
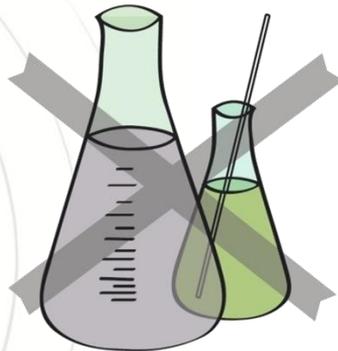


Figure 2: Control (left side) and test specimen (right side) after 28 days incubation in the humidity chamber.

Certificate:
Forschungsinstitut
Hohenstein

CHEMICAL RESISTENCE

- Excellent chemical resistance



NO CHEMICAL ADDITIVES

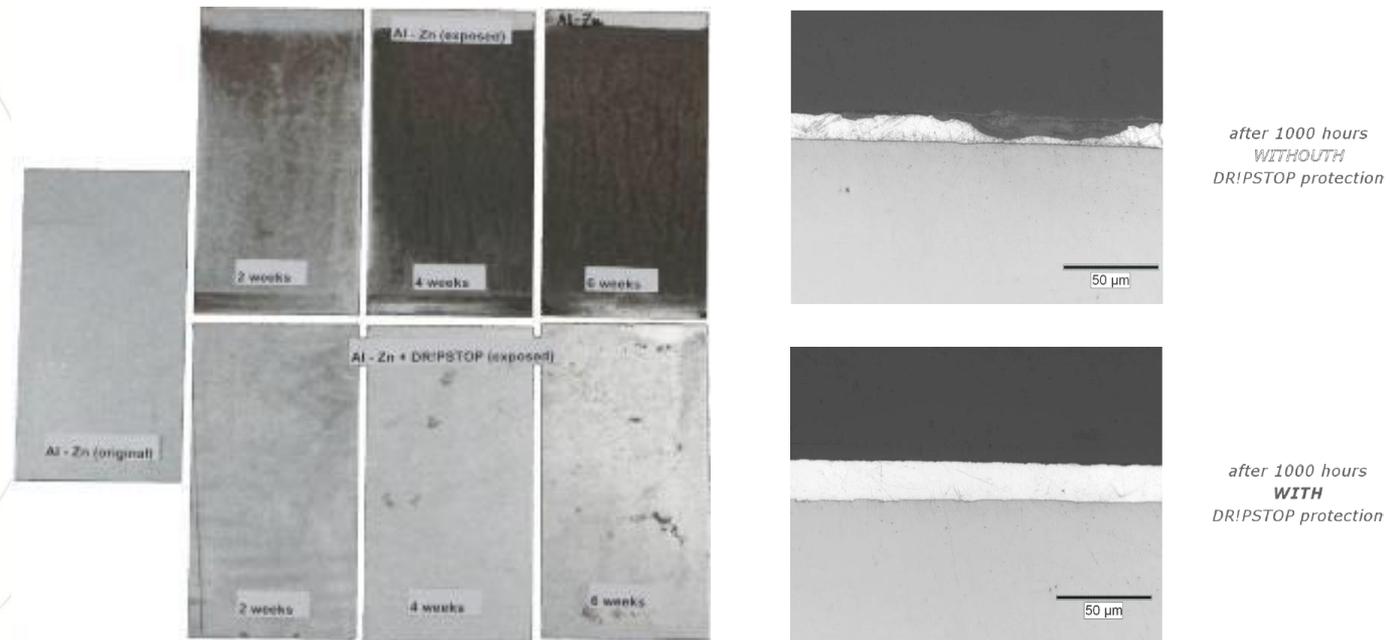
	Chemikalie		Beständigkeit
Säure	Salzsäure	HCl	Gut
	Salpetersäure	HNO ₃	Gut
	Phosphorsäure	H ₂ PO ₅	Gut
	Schwefelsäure	H ₂ SO ₄	Gut
	Ameisensäure	HCOOH	Gut
	Essigsäure	CH ₃ COOH	Gut
Lauge Hydroxid	Natriumhydroxid	NaOH	Gut
	Kaliumhydroxid	KOH	Gut
	Ammoniak / Hydroxid	NH ₃ / NH ₄ OH	Gut
Alkohole	Methanol	CH ₃ OH	Gut
	Äthanol	CH ₃ CH ₂ OH	Gut
	Isopropanol	C ₃ H ₇ OH	Gut
	Bhutanol	C ₄ H ₉ OH	Gut
Aromaten	Phenol	C ₆ H ₅ OH	Gut
	Benzol	C ₆ H ₆	Schlecht
	Xylol	C ₆ H ₄ (CH ₃) ₂	Schlecht
	Toluol	C ₆ H ₅ CH ₃	Schlecht
Keton	Aceton	CH ₃ COCH ₃	Schlecht
	Methyl-Athyl-Keton	CH ₃ COC ₂ H ₅	Schlecht
	Cyclohexanol	C ₆ H ₁₀ O	Schlecht
Chlorierte Kohlenwasserstoffe	Methylchlorid	CH ₃ Cl	Gut
	Dichlormethan	CH ₂ Cl ₂	Gut
	Chloroform	CHCl ₃	Gut
	Trichloräthan	C ₂ H ₃ Cl ₃	Gut
	Trichloräthylen	C ₂ HCl ₃	Gut
Sulfid	Schwefelwasserstoff	H ₂ S	Gut
	Methanliol	CH ₃ -SH	Gut
	Dimethylsulfid	C ₂ H ₅ -SH	Gut
	Diäthylsulfid	C ₄ H ₉ -SH	Gut
Fette, Öle		Mittel	

PROTECTION AGAINST CORROSION



This test provides significant evidence that **DR!PSTOP**[®] protects metal panels exposed to severe conditions in agricultural buildings used in livestock confinement. The panels covered with **DR!PSTOP**[®] resist corrosion much better.

- Results of corrosion test after 6 weeks / 1000 hours (cross section test done by Arcelor USA)

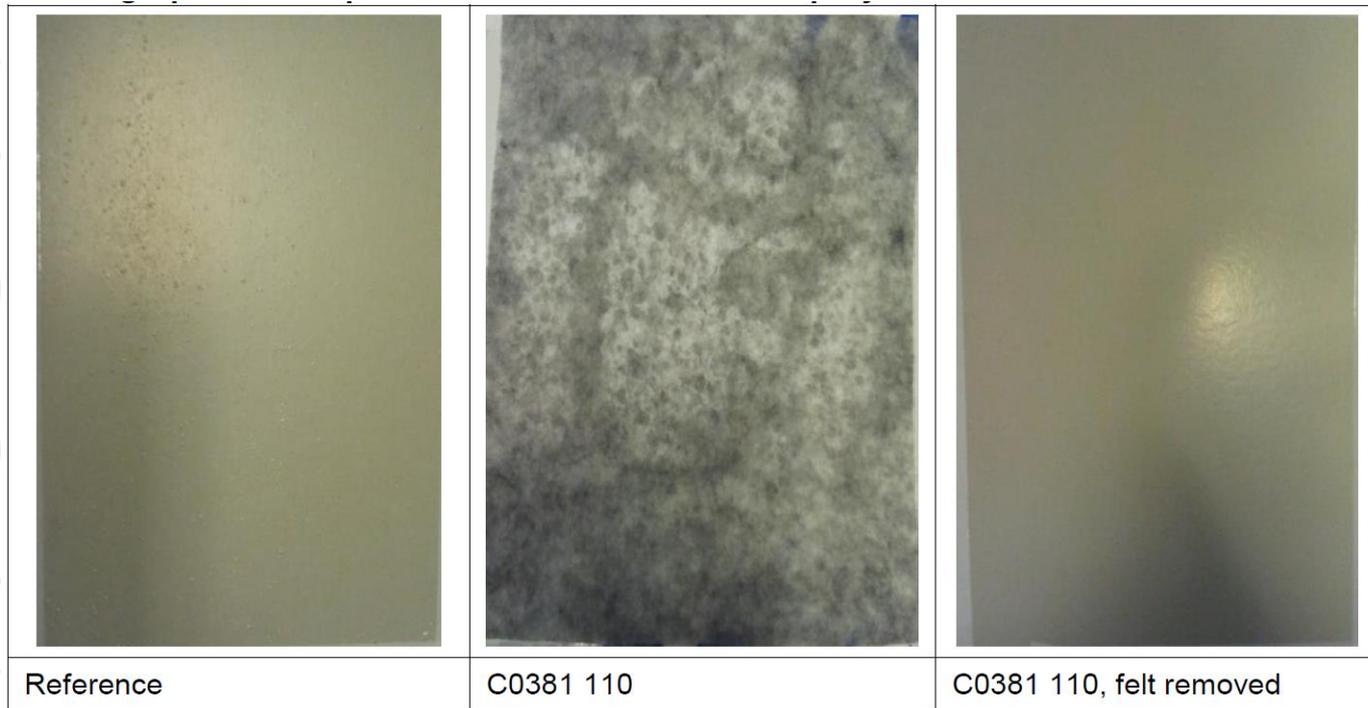


PROTECTION AGAINST CORROSION



DR!PSTOP[®] protects metal panels exposed salty environment and is therefore suitable for use in maritime areas.

- Salt spray test according to ISO 9227



ACOUSTIC

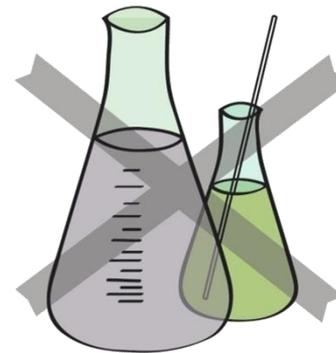
Sound absorption	EN ISO 20354	125 Hz	0,02
		500 Hz	0,04
		1000 Hz	0,04
		2000 Hz	0,12
		4000 Hz	0,42
Sound absorption coefficient	EN ISO 354	100-5000 Hz	$\alpha_w = 0,10$ (L)
Rainfall noise reduction	EN ISO 140-18 EN ISO 140-1	-2 dB(A) reduction from 71dB(A) to 69dB(A) Human ears senses 2dB(A) sound reduction as a 12% noise reduction.	



HEALTH & ENVIRONMENT

DR!PSTOP[®] does not emit any harmful substances and is completely safe to use in most environments.

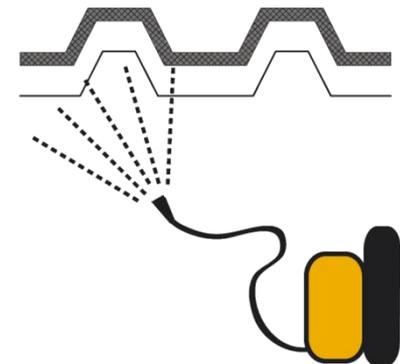
- **Composition:**
 - Polyester membrane
 - Synthetic rubber glue



NO CHEMICAL ADDITIVES

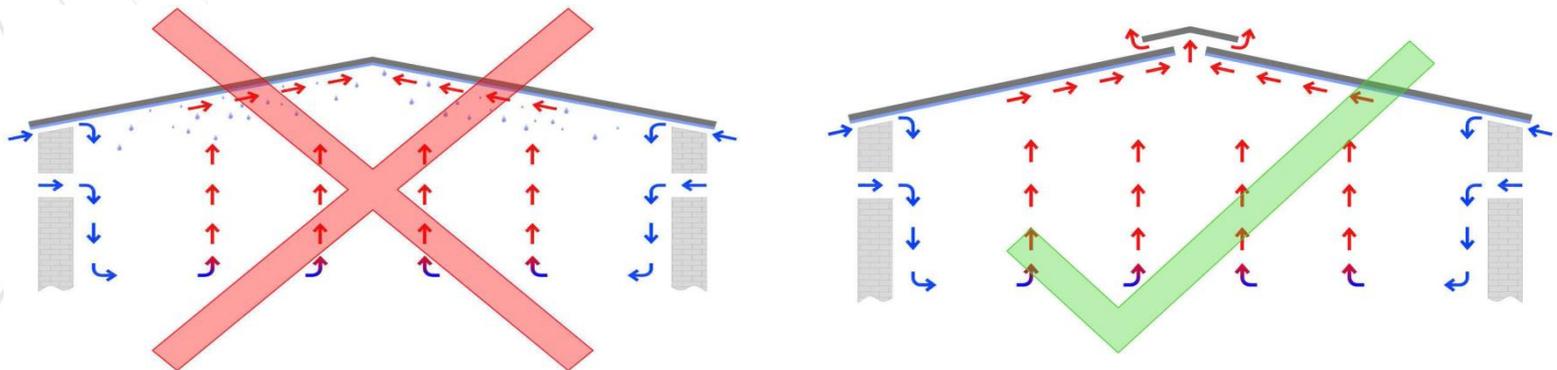
MAINTAINANCE

- No special maintainance neccessary.
- When dirty can be cleaned with high pressure water jets, sponge, brush,...



VENTILATION

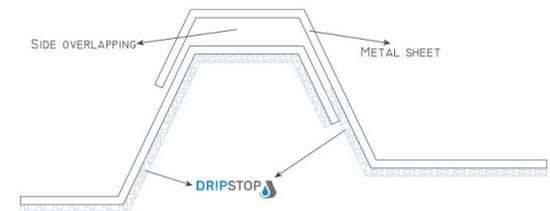
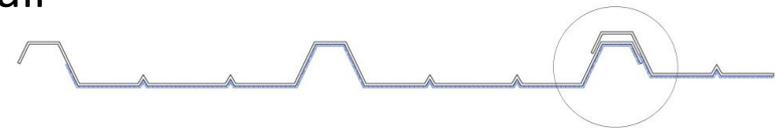
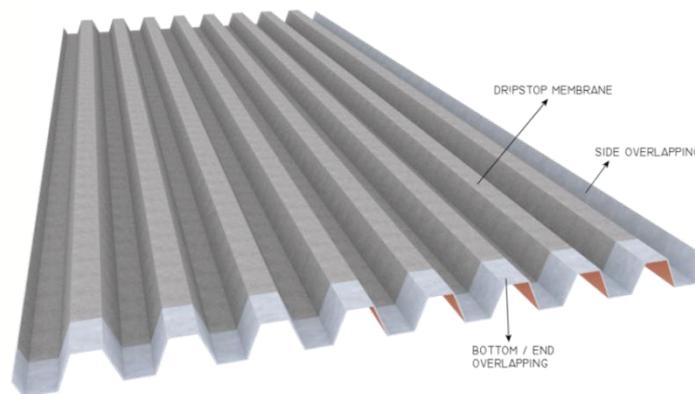
- **Cold roof = ventilated roof**
- For a proper function it is necessary to allow membrane to dry during the day.



CAPILLARITY

There are several possibilities how to prevent capillarity before or after profiling:

- **AUTOMATIC:**
 - cutting, hot wire, hot plate, hot air
- **MANUAL:**
 - burning, spraying



MARKETS FOR DR!PSTOP[®]

AREAS OF USE



Storages



Industry buildings



Stables



Storages



Projecting roof



Hangars



Residential



Sport halls



Warehouses for silage



Parking houses

DR!PSTOP
Condensation control 



Stables

AND MORE
DR!PSTOP[®]

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**Why should you
work with us?**

because...

- **Together we will find appropriate solutions**
- **The price is right**