

# ABC™ Coater



## One ABC™ Coater for every need

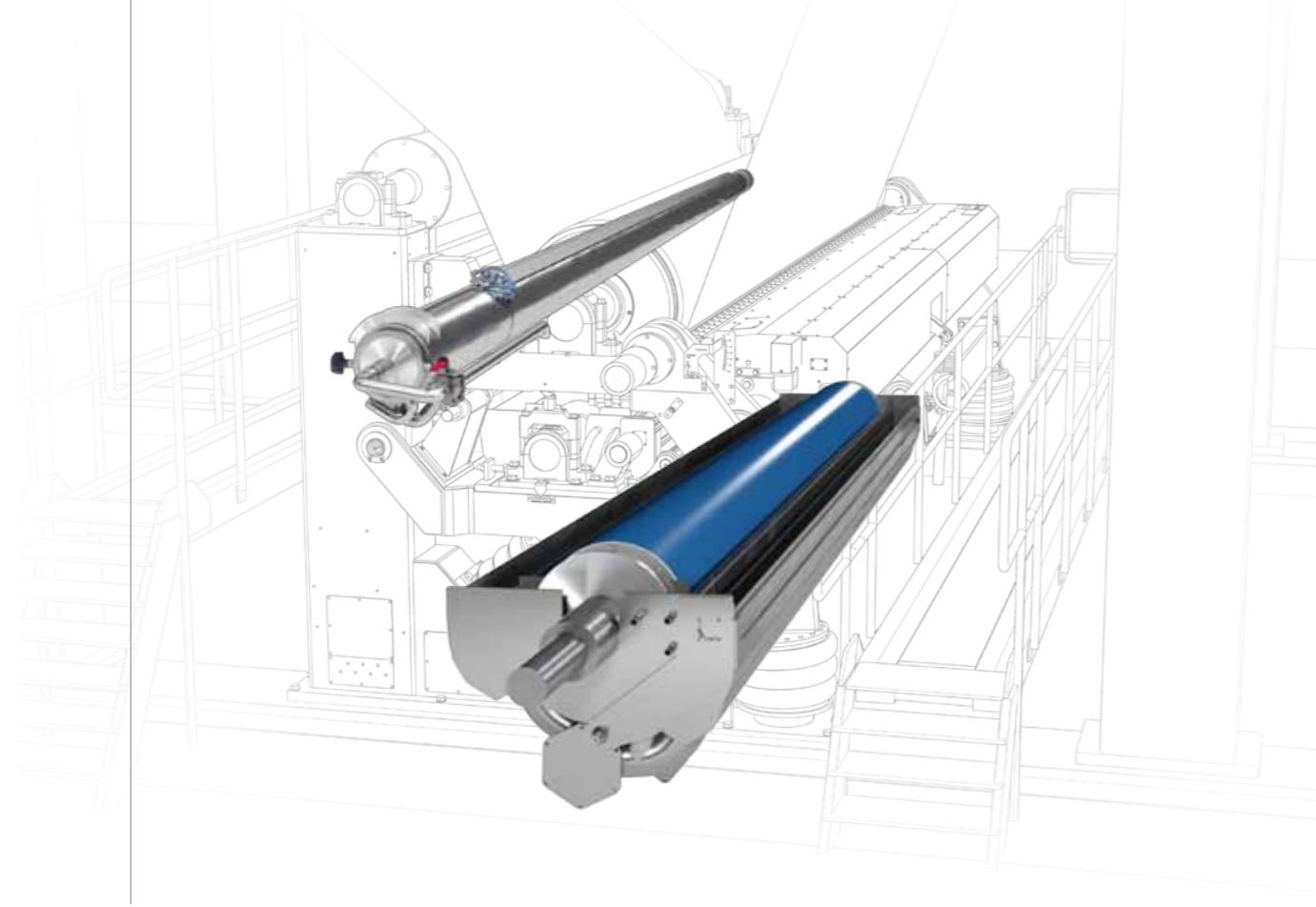
UMV Coating Systems AB is a supplier of blade coaters since 1960. The start was the well-known Billblade® Coater, which is installed worldwide, with more than 140 installations. UMV has, since then, contributed with valuable innovations for the coating process and continues to allocate substantial resources for continued high-end development for the paper and board industry.

Early 1990, UMV developed and introduced the ABC™, automatic profiling control system for blade coaters, which made automatic profiling possible due to the constant tip principle.

In addition to the blade coater development, UMV has developed the unique INVO® Jet applicator system with compact rotosymmetric design for improved availability of the Jet application technology as well as easier access for maintenance, cleaning and service.

The design of the flooded nip-roll applicator in the ABC™ Coater concept fulfils high requirements on the operation performance, such as uniform CD and MD profiles in combination with easy access for maintenance and cleaning.

The technology level of the ABC™ Coater from UMV can be chosen for optimization of the customer needs, quality on the base paper, coating formulas and investment costs.



## ABC™ Coater, Application System

for optimal technology and process level

The INVO® Jet consists of the Jet applicator itself and a double walled pan for internal cooling. The INVO® Jet has an open structure to give access to all of the surfaces of the coater.

All the surfaces coming into contact with the coating color are cooled in order to avoid build up of coating color. The cooling up to the tip of the slice is very important to ensure optimal and uniform profiles. Mill operations shows that the cleaning time is reduced by half compared to other conventional jet applicators in the market.

The INVO® Jet has three different operation positions, service, stand-by and coating. The Service position enhances the cleaning of the Jet opening and it gives an opportunity for ocular observations. The stand-by position limits the time from blade on until the coating color reaches the blade tip. This saves the blade tip from quick deterioration.

The coating color application width is easily controlled by a movable shield that redirects the flow at the edges.

Benefits with the INVO® Jet:

- Uniform application in MD and CD
- No clogging of the slice
- Easy cleaning and minimal maintenance
- Longer up time between shutdowns
- Excellent performance from low to high speeds
- Quick ON-OFF movements which keeps the coating blade in good condition



The Flooded nip-roll applicator, INVO® Roll, is designed for best technical and process performance. The pan is double walled through all the surfaces for water circulation and cleanliness purpose. The double walled chambers are designed for 2 times higher water pressure allowance compared to conventional design.

The level arm movement at service position is designed for easy access and the pan has vertical position by the cleaning operation. The edge of the metering roll has a splash shield to avoid risk for leakage and the coated width is controlled by metallic foils.

Benefits with the INVO® Roll:

- Uniform application in MD and CD
- Clean coated width
- Secured cooling throughout the whole pan
- Large opening and easy access for cleaning and maintenance
- Splash shield on metering roll shaft to avoid leakage

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## Technology level of ABC™ Coater

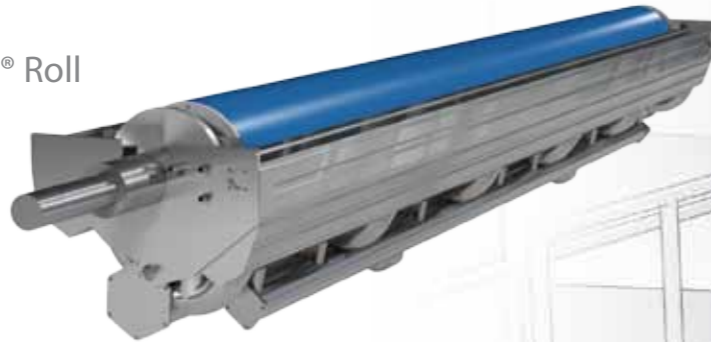
### ABC™ Profiling options:

- ABC™ System in Automatic mode
- ABC™ System in Manual mode
- Conventional profiling mode

### Metering methods:

- Blade
- Rod
- INVO® Tip

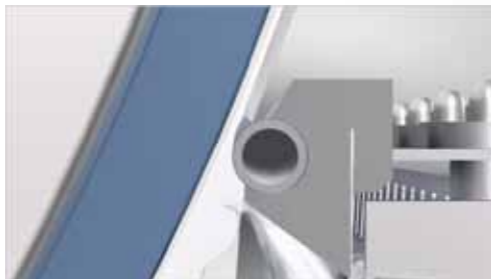
### INVO® Roll



### INVO® Jet



### INVO® Tip



The ABC™ Coater fits excellent together with the INVO® Tip metering element, due to the self positioning effect and quick control of the linear load.



# ABC™ Coater, Profiling System

for excellent runnability and high product quality

The ABC™ control mechanism is very reliable and developed to withstand the harsh environment in the coating machine. The control actuators are made of acid proof steel and the control signals from the QCS system or manual operation are conveyed by air-tubes from the E/P transducers (Safely protected in cabinets outside the machine) or pneumatic actuators. Each CD position has its own pneumatic signal and one pneumatic signal linked to all CD positions sets the correct coat weight level. The first actuator of this type was installed 1998 and they have proved to be maintenance free.

The ABC™ profiling mechanism is based on the principle, that the backing roll is the reference for the profiling system. This means that the disturbance from the blade holder position or movement is eliminated. The result of this principle is a self positioning effect that results in uniform and excellent profiles already at the start of the coating operation.

## Benefits with the ABC™ Profiling:

- Instantaneous flat Cross Direction profiles
- Repeatable and uniform quality
- Allows for quick grade changes
- Large coat weight range with uniform profiles also when applying high coat weights

## ABC™ coating system in automatic mode

The ABC™ mechanism is developed for Automatic profiling and by implementing automatic profiling, the profile is improved further. The final result is based on the capability and quality level of the QCS system. Normally excellent 2-Sigma values of 0,2 g/m<sup>2</sup> are achieved, depending on paper grade and coating formulas.

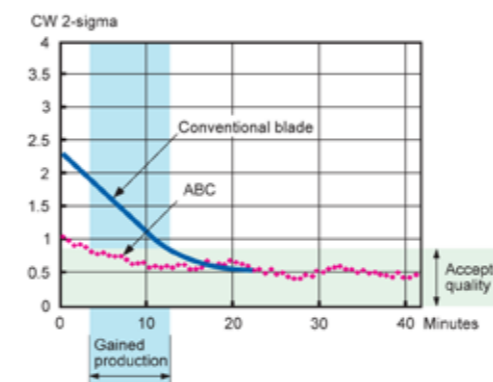
UMV helps the QCS system supplier to reach best performance and has the experience from all the important brands on the market.

# ABC™ Coater, Profiling System

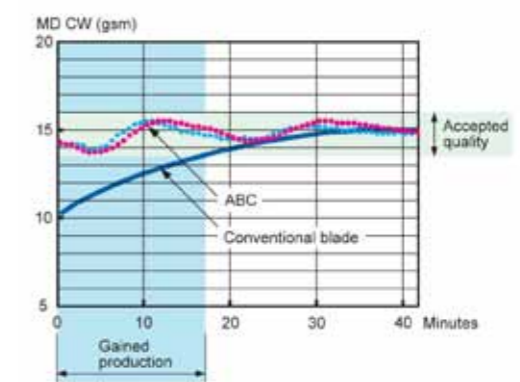
for excellent runnability and high product quality

## ABC™ system in manual mode

The ABC™ System gives excellent profiles already in manual mode due to the self-positioning. This is shown by the initial 2-Sigma values that are achieved. The first 2-Sigma data presented by the QCS system are normally around 1 g/m<sup>2</sup>. After 6-8 scans the 2-Sigma reaches 0,8 g/m<sup>2</sup>, this without any control action from operator or QCS system. In other words, 0,8 g/m<sup>2</sup>, 2-Sigma values are reached already by the start of the coating operation and in fact the product can be supplied to the end customer.



Picture that shows the 2-Sigma value over time. The first presented 2-Sigma value from the scanner are normally in the range 1.0 g/m<sup>2</sup>, which is half the value of a conventional system.



Picture that shows the Repeatability of the ABC™ System. The settings from previous production is valid.

## Conventional Profiling system

The ABC™ Coater can be fitted with a conventional Profiling system and a blade beam. This has the same performance as conventional blade coaters in the market.

The blade beam and profiling system can be changed and upgraded into an ABC™ System at a later stage.





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*A company within*



TOTAL FOCUS ON COATING

**UMV** 