

BE SCD® 4.0 Die Technology

FASTER PURGING

It's in
SCD® 4.0



BE SCD® 4.0 Die Technology purges faster because it has less wetted surface area – which is critical for quick product changeovers and lean manufacturing

The more steel in your die that is in contact with melted plastic, the longer it will take to purge out all traces when you change over to a different resin for another multi-layer film structure. This is especially true for nylon, which is difficult to remove from the die.

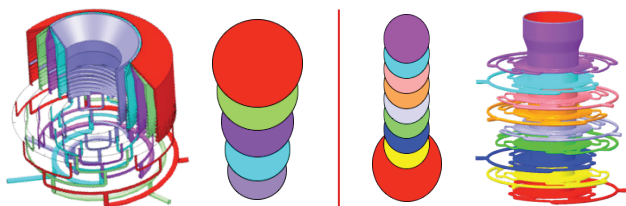
Hypothetical 5-layer Cylindrical Die

Each layer gets progressively larger with greater area of steel in contact with molten resin – resin that may need to be purged out to change film structures.

9-layer Streamlined Coextrusion Die

Every module is essentially the same design with a short resin path and very low wetted surface area between the extruder and the die lip – for the quickest resin changes possible.

Relative wetted surface area of each layer



Cylindrical Die

SCD® 4.0

In the BE SCD® 4.0, almost every layer has 40%-70% less wetted surface area than the cylindrical die – that includes the layers which will be nylon, EVOH, and tie resins. Together with the Streamlined Flow Channels that eliminate dead spots, this means that the BE SCD® 4.0 has the following benefits:

- Far less purging time and scrap, especially when removing nylon
- More layers does not significantly increase purge time and scrap
- Less resin degradation due to long residence times
- Reduces Economic Order Quantity (EOQ)



BE SCD® 4.0 Die Technology

SCALABILITY

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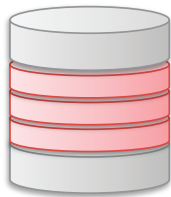


BE SCD® 4.0 Die Technology is scalable, which means it can grow with your needs

Today you may need to add capacity to make 5-layer films – polyolefins or simple barrier structures. But what if you plan to offer more complex films in the future? High barrier structures need at least 7 layers. Packaging film designers now use up to 9 layers to fine-tune film properties.

How do you protect today's capital investment and still have the capabilities you need tomorrow?

Ask BE to design your BE SCD® 4.0 with upgrading in mind.



A 5 layer SCD® can make polyolefin films & PO/tie/EVOH/tie/PO



By adding 2 layers later you can make high barrier structures like PO/tie/PA/EVOH/PA/tie/PO



Scaling up to 9 layers enables your SCD® 4.0 to make the widest portfolio of film structures in the industry

BE's SCD® 4.0 Streamlined Coextrusion Die: Protect Your Capital Investment

Only our unique modular technology enables you to buy the die you need now and also ensure you can keep up with evolving film designs.

Our engineers can add 2 modules to a 5 layer SCD® 4.0 and upgrade it to a 7 layer die – saving 80% of the original die investment. Converting to 9 or even 11 layers is just as easy and cost-effective.

The whole line, including extruders, can be reconfigured in one week on-site.



BE SCD® 4.0 Die Technology

EASY TO CLEAN

It's in
SCD® 4.0



The unique design of BE SCD® 4.0 Die Technology makes it the easiest co-extrusion die on the market to clean with complete confidence, no matter how many layers it features

- The smaller wetted surface area means less plastic to remove
 - The fully streamlined channels – with no hang-up points - mean no corners to clean carbon out of
 - All channels are easy to reach when the die is opened, with no blind channels filled with inaccessible plastic.
- You can see exactly how clean your die is, before starting production!**

When BE service technicians arrive at your plant for the first die cleaning, they will train your personnel to efficiently clean the die in-house with standard tools and supplies. The SCD® 4.0 is engineered to be straightforward and foolproof to disassemble, clean, inspect and reassemble with perfect alignment, ready to put back into production.

**BE's SCD® 4.0 Streamlined Coextrusion Die: Clean it less often!
Clean it easily in-house with your own personnel!**

No need for:

- Cleaning ovens
- Specialized tools
- Expert die knowledge
- Sending the die to a specialized service provider
- Sending the die to the OEM

Typical time between full cleaning: 18 to 36 months

Typical time required to clean a die: 2 to 5 days

You can even open and clean only the specific sections that are first to contribute to quality issues – like thin EVOH or tie layers degrading more rapidly than the rest – to extend the time between full die cleanings.



BE SCD® 4.0 Die Technology

TEMPERATURE ISOLATION

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SCD® 4.0

BE SCD® 4.0 Die Technology offers temperature isolation as required between layers, enabling optimal temperature profiles for multi-layer barrier films

Individual SCD® Air die modules not only have dedicated temperature control zones, they are also separated by an air gap to minimize heat transfer from adjacent modules, which enables operating temperature differentials of up to 30°C. Even more thermal isolation is assured with SCD® Air Plus and SCD® Isotherm.

That means when producing film structures containing nylon (PA), only the nylon layers need to be heated to 250°C. Other layers of heat-sensitive materials like EVOH and sealants can be operated at lower temperatures, reducing degradation. Both die and extruder temperatures for each resin layer can be fine-tuned to optimize processability and film quality.



Layer	EVOH Barrier		High Barrier		Asymmetric	
I	PE	220°C	PE	220°C	PA	250°C
H	PE	220°C	PE	220°C	Tie	210°C
G	PE	220°C	Tie	210°C	PE	220°C
F	Tie	210°C	PA	250°C	Tie	210°C
E	EVOH	220°C	EVOH	220°C	PA	250°C
D	Tie	210°C	PA	250°C	EVOH	220°C
C	PE	220°C	Tie	210°C	PA	250°C
B	PE	220°C	PE	220°C	Tie	210°C
A	Sealant	200°C	Sealant	200°C	Sealant	200°C

Benefits:

- More stable blown film process
- Higher output
- Better quality film
- Less resin discoloration and degradation
- Less frequent die cleaning

Don't settle for a die that overheats thermally sensitive resins!

No other co-extrusion die technology is as flexible for producing multi-layer films from different polymers as BE's SCD® 4.0 Streamlined Coextrusion Die.

