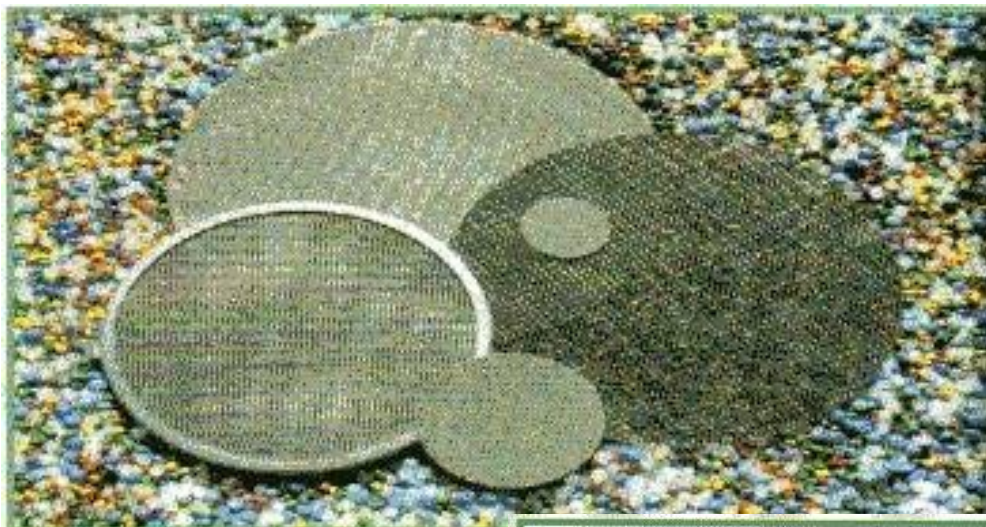


# RECYKLACE TERMOPLASTŮ, TERMOSETŮ A PRYŽÍ

RNDr. Ladislav Pospíšil, CSc.

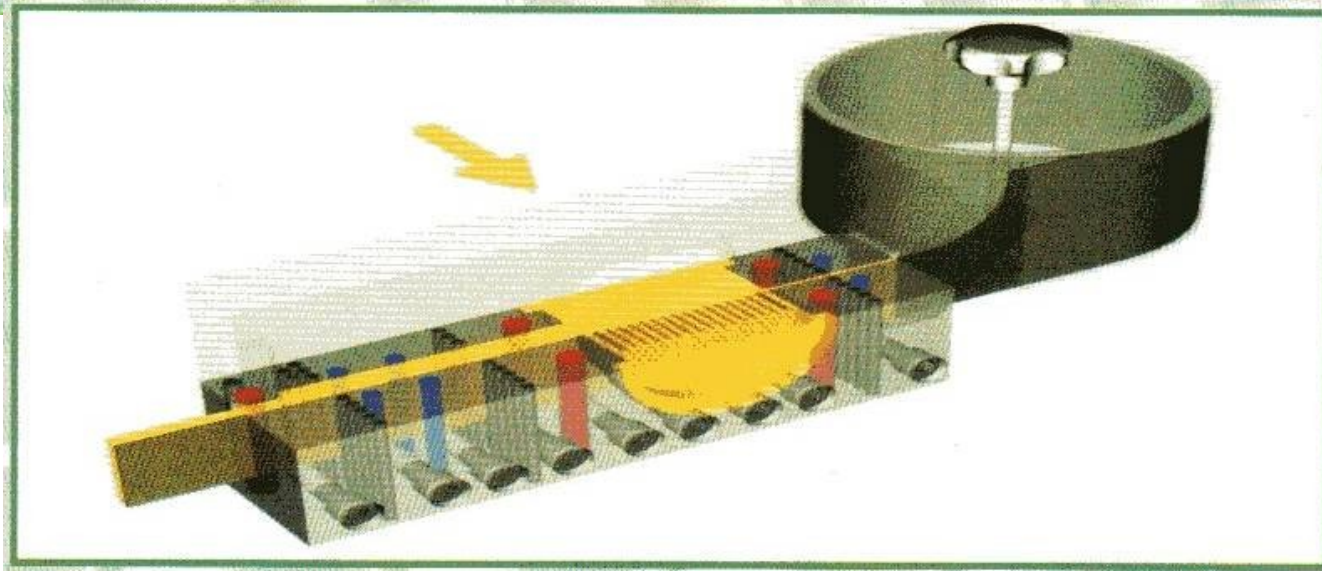
[pospisil@polymer.cz](mailto:pospisil@polymer.cz)

# Filtrace taveniny je klíčová operace - 1



Diskontinuální filtrace > po ucpání se vyjme a dá do odpadu

Kontinuální filtrace > po ucpání se posune čistý kus do proudu taveniny  
*Lze ale těžko vrstvit! Nevím o tom, že by to bylo děláno.*



(převzato z doporučení knihy  
od V. Goodship)



Figure 6.3 Breaker plate

**LAMAČ**

SMĚR TOKU  
TAVENINY  
↓

Krycí tkanina (síto)

FILTRAČNÍ tkanina (síto)

Podložní tkanina (síto)

**LAMAČ**  
**(Braeker**  
**Plate)**

# Filtrace taveniny je klíčová operace - 2

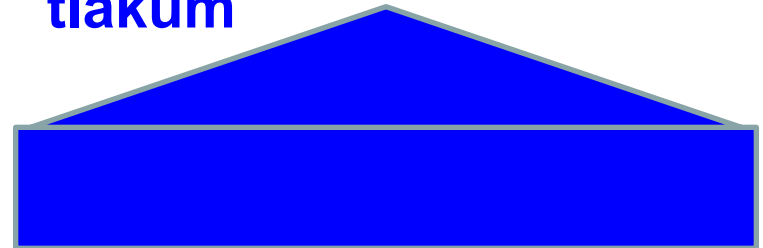
## LAMAČ I

- Poměr plochy otvorů/plocha celková je malý
- Malé otvory
- Průřez obdélník
- Extrémní tlak může lamač prolomit

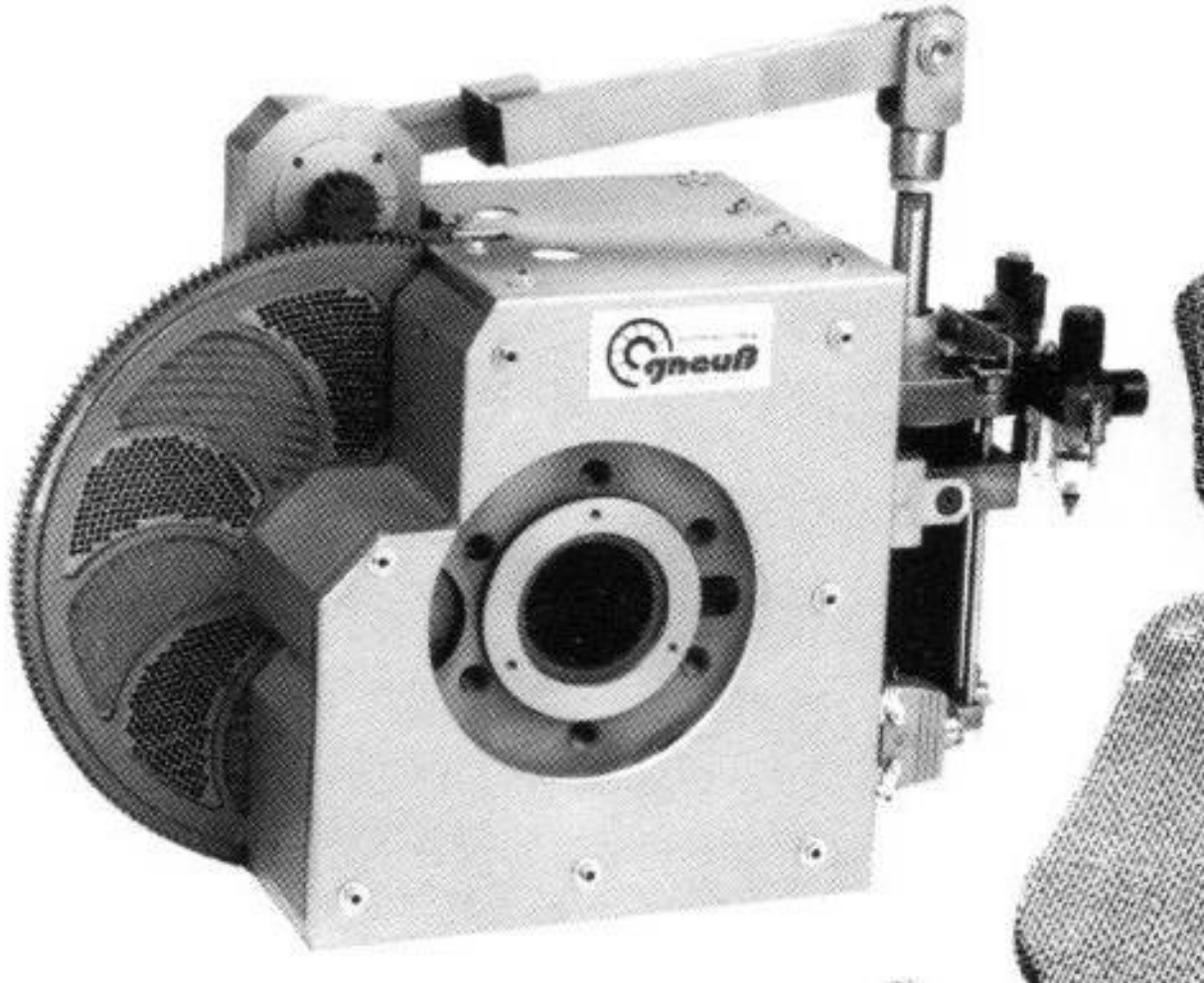


## LAMAČ II

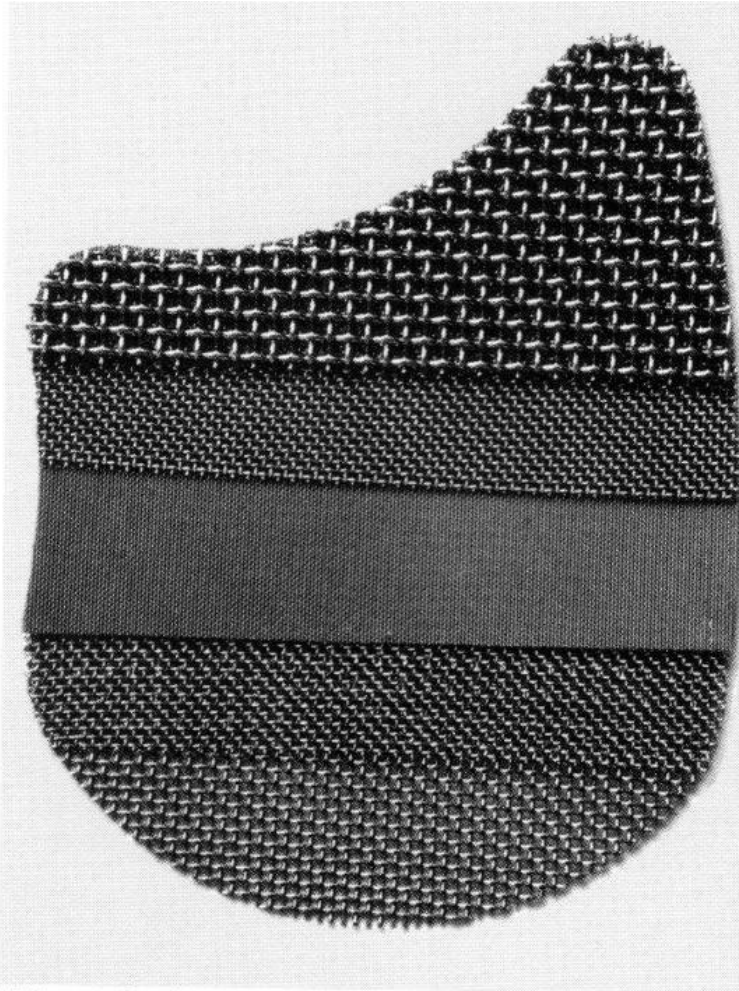
- Poměr plochy otvorů/plocha celková je velký
- Průřez obdélník s vrcholovým kuželem
- Velké otvory
- Lépe odolává extrémním tlakům



# Karuselový systém 2



# Filtrace taveniny je klíčová operace!



Wire cloth extruder screen with five layers

| 1                | 2        | 3               | 4               |
|------------------|----------|-----------------|-----------------|
| Micron Retention | Porosity | Number of pores |                 |
| $\mu\text{m}$    | %        | $\text{cm}^2$   | $\text{inch}^2$ |
| 500              | 73       | 180             | 1 146           |
| 500              | 68       | 140             | 959             |
| 400              | 69       | 250             | 1 527           |
| 400              | 69       | 210             | 1 395           |
| 315              | 68       | 390             | 2 432           |
| 315              | 68       | 310             | 2 021           |
| 250              | 68       | 600             | 3 837           |
| 200              | 69       | 947             | 6 108           |
| 160              | 69       | 1 479           | 9 543           |
| 125              | 68       | 2 379           | 41 290          |
| 100              | 69       | 3 764           | 24 282          |
| 75               | 69       | 6 400           | 39 377          |
| 63               | 68       | 9 426           | 60 812          |
| 42               | 61       | 16 438          | 106 042         |
| 25               | 59       | 40 000          | 258 064         |
| 75-80            | 59       | 2 480           | 16 000          |
| 56-63            | 60       | 3 880           | 25 000          |
| 36-45            | 55       | 9 920           | 64 000          |
| 28-32            | 56       | 37 200          | 240 000         |
| 22-24            | 45       | 55 800          | 360 000         |
| 20-24            | 51       | 25 390          | 163 800         |
| 15-18            | 41       | 71 610          | 462 000         |
| 16-17            | 60       | 67 700          | 436 800         |

# Filtrace taveniny je klíčová operace!

**Kongruenzen**  
teilweise abgerundet, um Vergleichbarkeit zu ermöglichen

| Lichte Maschenweite mm | USA Stand ASTM E 11—61 | Mesh-Zahl Tyler mesh/inch | Brit. Stand BS 410: 1962 mesh/inch | Franz. Stand AFNOR X 11—501 | DIN 1171 | UNI 2331 2332 | Maschen/cm <sup>2</sup> |
|------------------------|------------------------|---------------------------|------------------------------------|-----------------------------|----------|---------------|-------------------------|
| 0,037                  | 400                    | 400                       | —                                  | 17                          |          | 40            | 23 700                  |
| 0,043                  | 325                    | 325                       | 350                                |                             |          |               | 16 900                  |
| 0,053                  | 270                    | 270                       | 300                                | 18                          |          | 39            | 12 100                  |
| 0,063                  | 230                    | 250                       | 240                                | 19                          |          | 38            | 9 450                   |
| 0,075                  | 200                    | 200                       | 200                                | 20                          | 80       | 37            | 6 400                   |
| 0,089                  | 170                    | 170                       | 170                                |                             | 70       |               | 4 900                   |
| 0,104                  | 140                    | 150                       | 150                                | 21                          | 60       | 33            | 2 900                   |
| 0,125                  | 120                    | 115                       | 120                                | 22                          | 50       | 32            | 2 500                   |
| 0,15                   | 100                    | 100                       | 100                                |                             | 40       | 31            | 1 600                   |
| 0,16                   |                        |                           |                                    | 23                          |          |               |                         |
| 0,18                   | 80                     |                           | 85                                 |                             |          |               |                         |
| 0,20                   | 70                     | 65                        | 72                                 | 24                          | 30       | 28            | 900                     |
| 0,25                   | 60                     | 60                        | 60                                 | 25                          | 24       | 26            | 576                     |
| 0,30                   | 50                     | 48                        | 52                                 | 26                          | 20       | 25            | 400                     |
| 0,355                  | 45                     |                           | 44                                 |                             |          | 23            |                         |
| 0,42                   | 40                     | 35                        | 36                                 | 27                          | 16       | 22            | 256                     |
| 0,50                   | 35                     | 32                        | 30                                 | 28                          | 12       | 20            | 144                     |
| 0,60                   | 30                     | 28                        | 25                                 | 29                          | 10       | 19            | 100                     |
| 0,71                   | 25                     |                           | 22                                 |                             |          | 17            |                         |
| 0,76                   |                        |                           |                                    |                             | 8        | 16            | 64                      |
| 0,82                   | 20                     | 20                        |                                    | 30                          |          | 14            |                         |
| 1,00                   | 18                     | 16                        | 16                                 |                             | 6        |               | 36                      |
| 1,20                   | 16                     | 12                        | 14                                 |                             | 5        | 12            | 25                      |
| 1,30                   |                        |                           |                                    | 32                          |          |               |                         |
| 1,45                   | 14                     |                           |                                    |                             | 4        |               | 16                      |
| 1,65                   | 12                     | 10                        | 10                                 | 33                          |          |               |                         |
| 2,0                    | 10                     | 9                         | 8                                  | 34                          | 3        | 7             | 11                      |

| 1                | 2        | 3               | 4                 |
|------------------|----------|-----------------|-------------------|
| Micron Retention | Porosity | Number of pores |                   |
| μm               | %        | cm <sup>2</sup> | inch <sup>2</sup> |
| 500              | 73       | 180             | 1 146             |
| 500              | 68       | 140             | 959               |
| 400              | 69       | 250             | 1 527             |
| 400              | 69       | 210             | 1 395             |
| 315              | 68       | 390             | 2 432             |
| 315              | 68       | 310             | 2 021             |
| 250              | 68       | 600             | 3 837             |
| 200              | 69       | 947             | 6 108             |
| 160              | 69       | 1 479           | 9 543             |
| 125              | 68       | 2 379           | 41 290            |
| 100              | 69       | 3 764           | 24 282            |
| 75               | 69       | 6 400           | 39 377            |
| 63               | 68       | 9 426           | 60 812            |
| 42               | 61       | 16 438          | 106 042           |
| 25               | 59       | 40 000          | 258 064           |
| 75-80            | 59       | 2 480           | 16 000            |
| 56-63            | 60       | 3 880           | 25 000            |
| 36-45            | 55       | 9 920           | 64 000            |
| 28-32            | 56       | 37 200          | 240 000           |
| 22-24            | 45       | 55 800          | 360 000           |
| 20-24            | 51       | 25 390          | 163 800           |
| 15-18            | 41       | 71 610          | 462 000           |
| 16-17            | 60       | 67 700          | 436 800           |

| 1                | 2                | 3   | 4       | 5       | 6       | 7       | 8       | 9       | 10      |
|------------------|------------------|---|---------|---------|---------|---------|---------|---------|---------|
| Micron Retention | Number of layers | Part numbers of standard items for Gneuss Melt Filters, Type SF |         |         |         |         |         |         |         |
|                  |                  | SF 30   | SF 45   | SF 60   | SF 75   | SF 90   | SF 120  | SF 130  | SF 150  |
| 500              | 1                | 784 926   | 783 853 | 782 836 |         |         |         |         |         |
|                  | 2                |   |         |         | 741 990 | 742 328 | 744 393 | 755 256 | 744 982 |
| 400              | 1                | 784 933   | 786 131 |         |         |         |         |         |         |
|                  | 2                |   |         | 752 860 | 742 001 | 742 335 | 744 401 | 755 263 | 744 999 |
| 315              | 1                | 784 940   |         |         |         |         |         |         |         |
|                  | 2                |   | 752 822 | 646 253 |         |         |         |         |         |
|                  | 3                |   |         |         | 742 018 | 647 403 | 744 418 | 755 270 | 745 000 |
| 250              | 2                | 647 117   | 648 879 | 646 556 | 742 025 |         |         |         |         |
|                  | 3                |   |         |         |         | 647 410 | 744 425 | 755 287 | 745 017 |
| 200              | 2                | 647 124   | 645 902 | 646 563 |         |         |         |         |         |
|                  | 3                |   |         |         | 742 032 | 647 427 | 744 432 | 755 294 | 745 024 |
| 160              | 2                | 647 131   | 645 870 | 647 302 |         |         |         |         |         |
|                  | 3                | 752 790   | 648 886 | 647 319 | 742 049 | 647 434 | 744 449 | 751 355 | 745 031 |
| 125              | 3                | 647 155   | 648 893 | 647 047 | 742 056 | 647 441 | 744 456 | 754 657 | 745 048 |
| 100              | 3                | 647 162   | 648 901 | 647 326 | 742 063 | 647 458 | 744 463 | 755 302 | 745 055 |
| 75               | 3                | 752 808   | 752 839 | 647 333 | 752 930 | 647 465 |         |         |         |
|                  | 4                |   |         |         |         |         | 752 961 | 755 319 | 752 985 |
| 63               | 3                | 647 186   | 752 846 |         |         | 647 472 |         |         |         |
|                  | 4                |   |         | 647 340 | 752 947 |         | 752 978 | 755 326 | 752 992 |
| 40               | 4                | 647 193   | 648 932 |         |         |         |         |         |         |
|                  | 5                |   |         | 647 357 | 752 954 | 752 877 | 750 871 | 755 333 | 753 003 |
| 20               | 5                | 752 815   |         |         |         |         |         |         |         |
| 16               | 5                | 647 218   | 648 963 |         |         |         |         |         |         |