

Application for Crusher's Shredders with Hardox

HARDOX[®]

WEAR PLATE



Shredders

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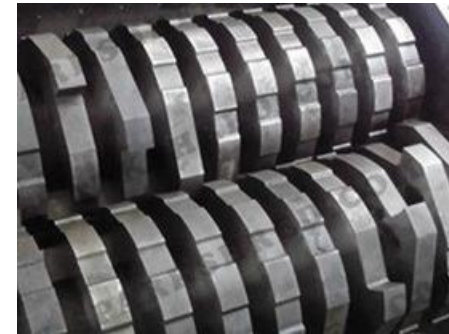
GMI

Hardox Application for Crusher's Shredders

■ What is the best material for a Crusher shredder ?

- ▶ Compare a purchasing cost and a life cycle
As a normal recommended materials are Carbon steel, Alloy steel (Cr/Mo steel) and Hardox steels.

Materials	wear resistance (a)	Material cost(b)	Machining cost(c)	취성 (연성)
S45C	1 (basic rate)	1(basic rate)	1(basic rate)	×
Hardox 500	3.0 fold	2.0fold	2fold	◎
Hardox550 (1)	4.0fold	2.5fold	2.5fold	◎
SKD 11 (2)	4.5fold	4.0fold	2.5fold	×
SCM 420 (3)	4.0fold	2.2fold	2.0fold	○



☞ Evaluation method : [(a)+(b)+(c)] x weighted value

☞ (2) SKD 11 : 열처리 HRC 62~63 , 취성에 약하다

(3) SCM420 : 1차 노멀라이징 , 2차 침탄열처리 (표면 HRC 59 , 심부 HRC 40), 취성에 강함

- ▶ 가장 경제적인 선택 : Hardox 550 (철,SUS , 알루미늄 등 스크랩 파쇄)
- ▶ 가장 경제적인 선택 (단가,수명기준):SCM420 (기판, 쓰레기,비닐 파쇄)

Hardox Application for Crusher's Shredders

■ Required core points for the best effective Shredders.

【Hardox550】 , Hrc55

- ▶ Required high impact wear resistance
 - ☞ High wear resistance with High ductility.
 - ☞ Hardness homogeneity through thickness.
- ▶ Required High hardness with high toughness.
 - ☞ Elongation : more than 8% ,
 - Impact resistance : more than 20Jule .



【 SCM 420】

- ▶ Required soft impact wear resistance (플라스틱, 비닐 등)
 - ☞ High wear resistance with High ductility.
 - ☞ Hardness homogeneity through thickness.
- ▶ Required High hardness with high toughness(침탄 열처리 Hrc59)
 - ☞ Elongation : more than 4% ,
 - Impact resistance : more than 10Jule .

Hardox Application for Crusher's Shredders

■ Manufacturing processes and Specifications

▶ Minimum cost , maximum effects for steel scrap

- ◆ Material : Hardox550 (Hrc55)
- ◆ Cutting : Water jet cutting to remove machining cost
- ◆ Machining Inner hole to be assembled with driving shaft



■ GMI has a expertise in Hardox plate

GMI , as a Hardox wear partner of SSAB

- ▶ Developed Hardox 550 for Shredders.
- ▶ Has Laser and Water jet cutting machines.
- ▶ Has a special tool for machining hardox plates(High productivity in machining)



GMI gives a best solution to meet customers' requirement