

ZA-27

** . . * . .

ZA -27 ZA -12 ZA -8

Zn - Al

ZA

ZA-27

.()

.ZA-27

5 3

370 °C

ZA-27

T4

30

ZA-27

34.7

ZA-27 : _____

-
-

-
-

*
**

ZA-27

Ti Ni -* : **-1**

⁽³⁾ Sr Si ZA-27

-* (ZA)

⁽⁴⁾

ZA-27 T4 27% ZA-27

ZA

ZA-27 ZA

)

T4 ⁽⁵⁾

ZA-27 ⁽¹⁾(

Pressure Die Casting

Gravity Die Casting

(T4)

ZA-27

: **-2** ⁽²⁾

: **1-2**

ZA-27

(1) : ZA-27

ASTM B86-1988 ⁽³⁾ -*

ASTM B86 ZA-27 (1)

%								
Zn	Cd	Pb	Sn	Fe	Mg	Cu	Al	
	0.0005	0.0005	0.0011	0.044	0.017	2.21	26.71	ZA-27
	Max.0.006	Max.0.006	Max.0.003	Max.0.075	0.01-0.02	2-2.5	25-28	ZA-27 ASTM B86-1988

5 ° C ± : **2-2**

(1) .300 ° C 100 ° C

H-13

.75 mm 52 mm

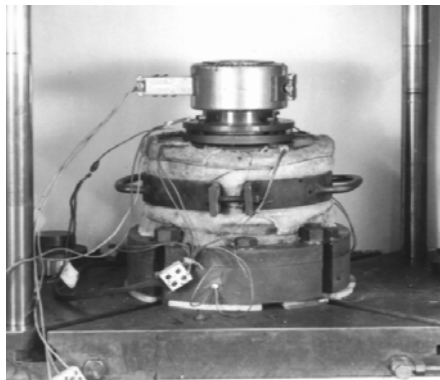
: 6-2

No.14 Hounsfield

(3)

(2)

No.16



(1)

Instron 1195

(7) 5 mm/min

ZA-27

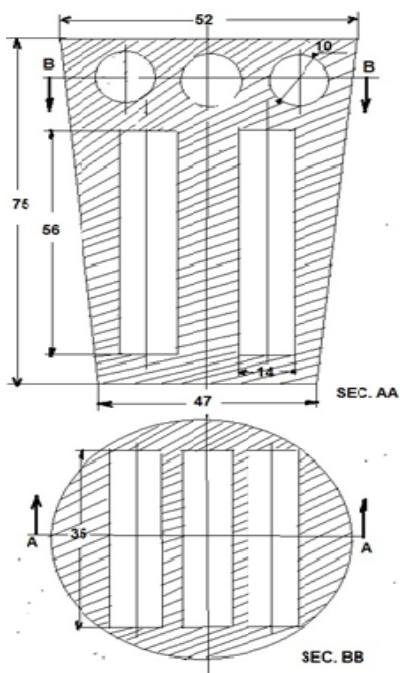
(Gravity Die Casting)

(Feeder Head)

°C 535

90°C

: 3-2



T4

(ZA27 3 370 °C

5

HT3)

(ZA27 HT5)

30

(6) ()

: 4-2

ZA-27

.(100ml H₂O + 4 g Na₂SO₄ + 50 g CrO₃)

: 5-2

-A

:(2)

.No.14-B

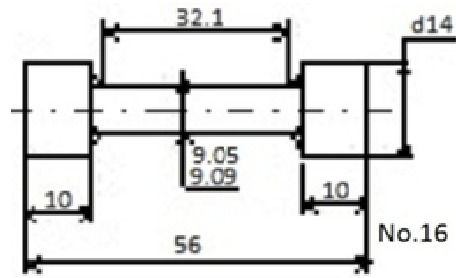
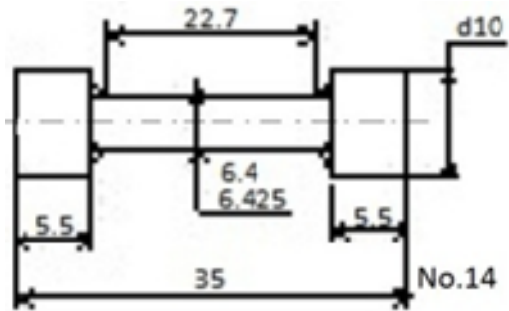
No.16

2.5mm

625

60

$\alpha + \eta$ α
 η eutectoid
 .interdendritic
 Y α X) (4)
 $\alpha + \eta$ Z interdendritic - η
 (eutectoid
 (Cored)
 (CuZn₄)
 .ZA-27
 (6 B) (5A)
 ZA-27



(3)

(5A)

ZA27

370 °C

3

: 7-2

ASTM G 99-95a 1997

ZA-27

5

$\alpha + \eta$

(5 B)

Ra = 2

64

Ra = 0.2

150-100 -50 N

/ 1

318 rpm

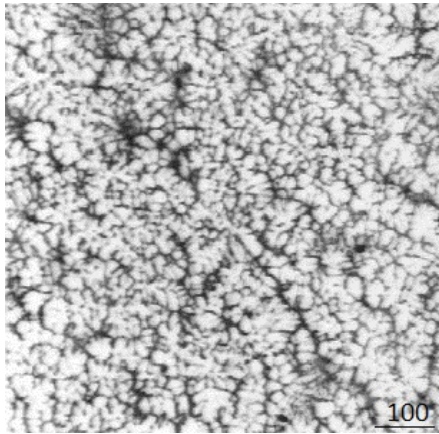
: -3

: 1-3

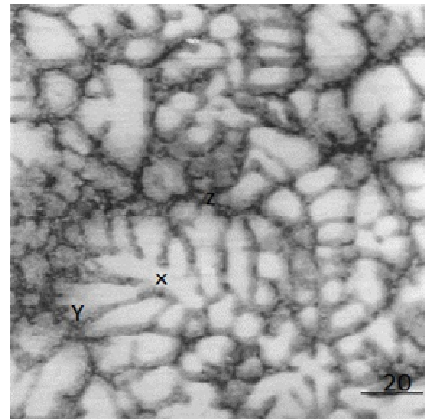
ZA-27

(4)

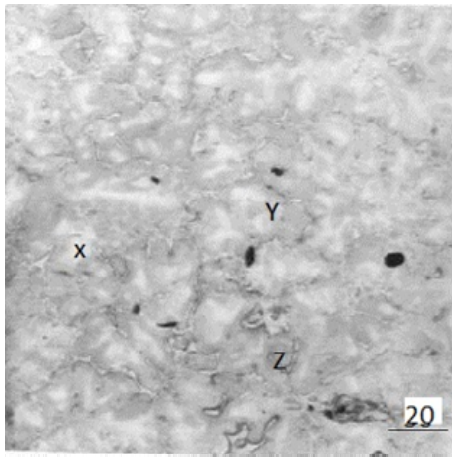
Dendrite



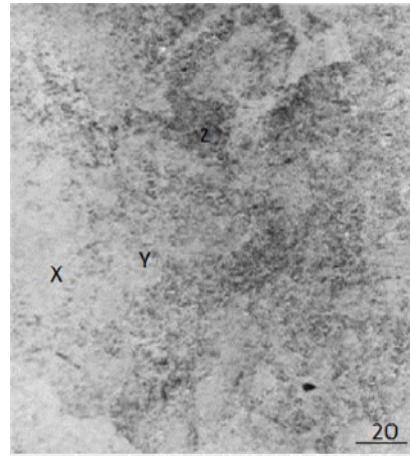
ZA-27



(4)



X 5 (B) 3
 α Z interdendritic - η



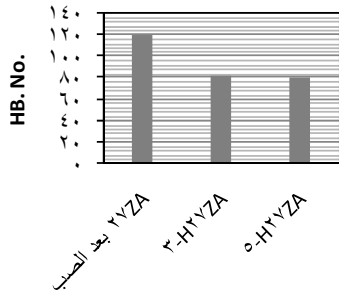
(A) ZA27 (5)
 Y α

: 2-3

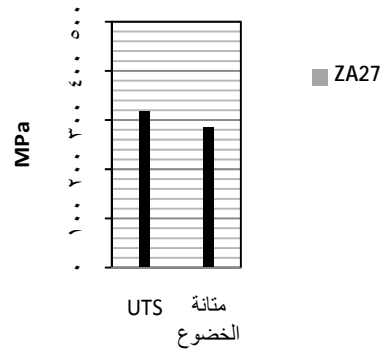
(8-7-6) (2)

ZA-27 (2)

		MPa	MPa	%	HB
ZA-27		439	390	9.5	121
ZA-27 HT3	3 370°C	318	285	11	83
ZA-27 HT5	5 370°C	291	248	15	81



ZA27 HB (7)
H5 H3 ZA27

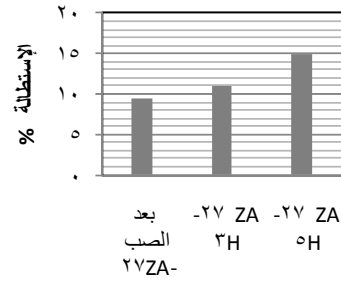


UTS (6)
ZA27 ZA27
H5 H3

ZA27-H3

ZA27-H5

(10)



ZA27-

ZA27-H5 H3

130 °C

154 °C

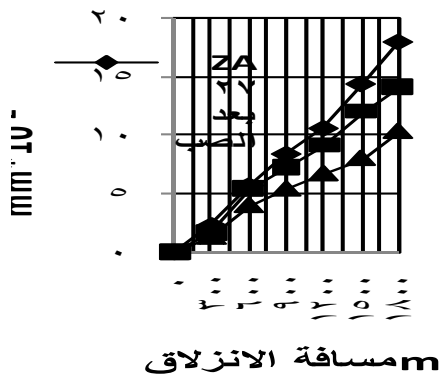
124 °C ZA27-H3

(11) ZA27-H5

ZA27 (%) (8)
H5 H3 ZA27

-3-2

(12-11-10-9)

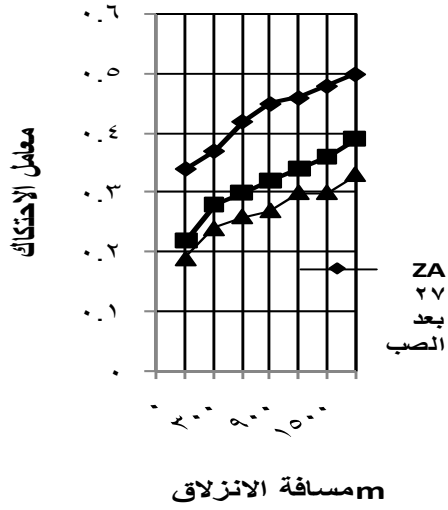


(9)
ZA27 -150N
H5 H3 ZA27
H5 H3

HT5 HT3
ZA27
ZA27
.150 N

ZA27 -H3

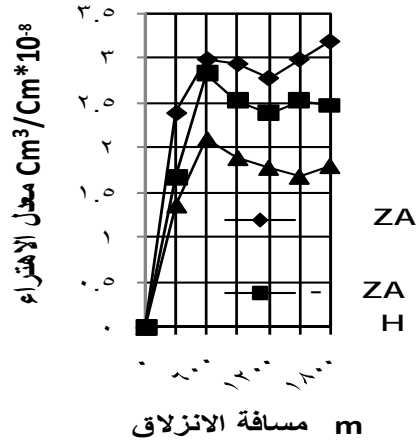
ZA27 -H5



(12)

ZA27 -H3 ZA27 -150N
 . ZA27 -H5

(14-13)



(10)

ZA27 -150N -
 .ZA27 -H5 ZA27 -H3

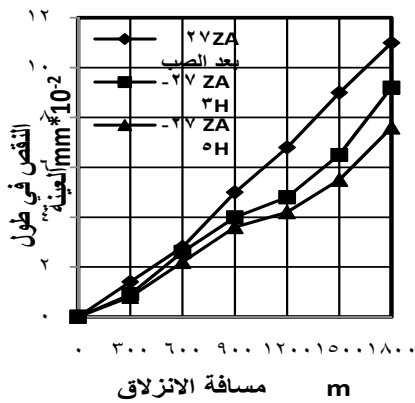
من خلال مقارنة

100 N

ZA27 50N

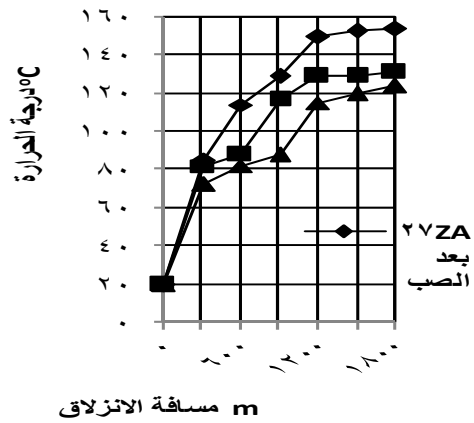
HT5 HT3 ZA27

(12)



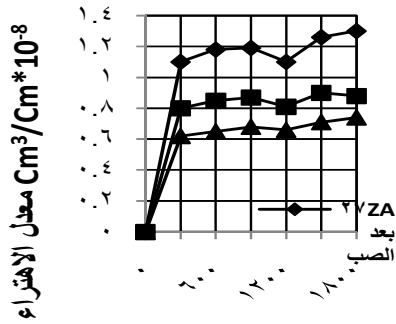
(13)

ZA27 - ZA27 -100 N
 .ZA27 -H5 H3



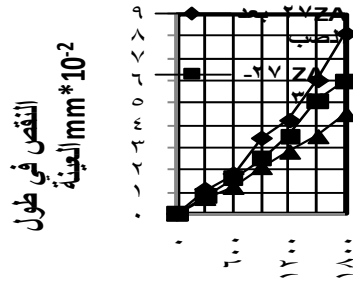
(11)

ZA27 -150N -
 .ZA27 -H5 ZA27 -H3



(16)

ZA27 -50 N -
 . ZA27-H5 ZA27-H3



m مسافة الانزلاق

(14)

- ZA27 -50 N
 ZA27-H3
 . ZA27-H5

(16-15)

-100 N -

ZA27 50N

.ZA27-H5 ZA27-H3

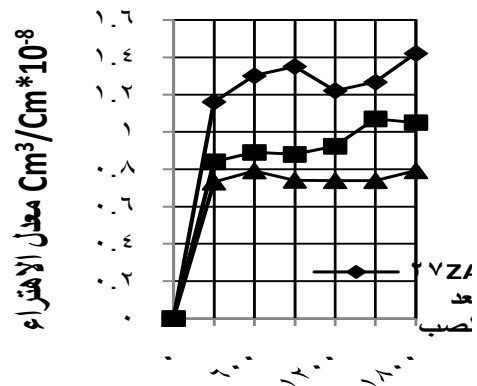
.HT-5 HT-3

(17)

ZA27 -100 N -
 ZA27-H5 ZA27-H3

(18)

ZA27 -50 N -
 .ZA27-H5 ZA27-H3

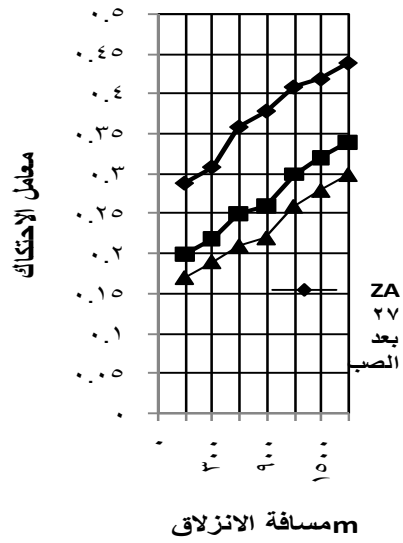


m مسافة الانزلاق

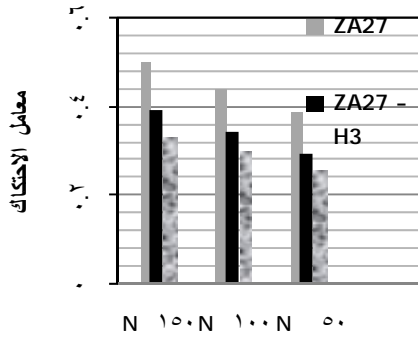
(15)

ZA27 -100N -
 . ZA27-H5 ZA27-H3

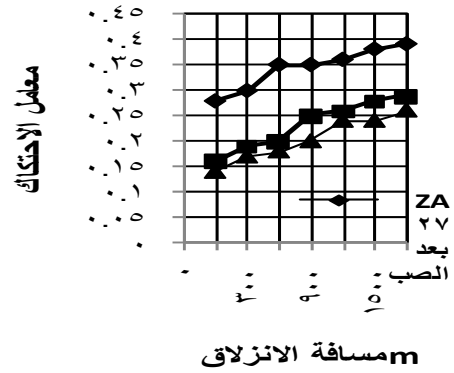
150N
1800 m
5



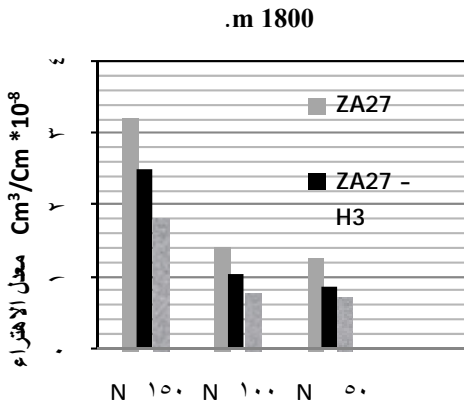
(17)
ZA27 - H3
ZA27 - 100 N
ZA27 - H5



(19)



(18)
ZA27 - H3
ZA27 - 50 N
ZA27 - H5
(20-19)



(20)

.1800m

% H3

43.3%

H5

22.5

Zn-η (s) : -4
 .(h.c.p.) -4-1
 η :

η
 34.7 .(2)

()
 (B A 5)
 η : -4-2

nonhomogeneous

.(2)
 : -4-3
 η+α
 α- Al

.(Zn) Al
 (f.c.c.)

(9)

(2)

: - 5

()

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