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Experimental Studies on Joints of Large-Diameter Deformed Bar RIVER CON D51

..(; ¾ (Masakatsu Sato) § CE ¾ QYukiharu Muraki)

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Synopsis :

In jointing large diameter deformed bar at construction site, it is particularly important to judge the most appropriate method in accordance with the practical condition. In order to satisfy this requirement, load-elongation curves and fatigue stress ranges at two million cycles have been measured not only on a conventional gas but welded joint but also on such recently developed mechanical joints as Grip Joint, o8(2062Cie Sp19F)7.ra T788(205n

UDC 691.87 : 624.023.88
620.172.21 : 620.178.322.1

太径鉄筋リバーコン D51 を用いた現場継手の強度試験

Experimental Studies on Joints of Large-Diameter
Deformed Bar RIVER CON D51

佐藤政勝* 今村幸晴**

Masakatsu Sato

Yukiharu Muraki

Synopsis:

In jointing large diameter deformed bar at construction site, it is particularly important to judge the most appropriate method in accordance with the practical condition.

In order to satisfy this requirement, load-elongation curves and fatigue stress ranges at two million cycles have been measured not only on a conventional gas butt welded joint but also on such recently developed mechanical joints as COLD TWIN, COLD SPOT, COLD WELD, etc.

静的試験の結果にもとづく基準であるため動的荷重を受ける構造物に対しては不十分なものとなっている。

当社では、太径鉄筋リバーコンD51の実用化にあたり、素材の研究^{2~4)}と並行して重ね継手、ガス

い込ませることにより、くい込み肉とふしとのせん断力で応力を伝達する工法である。圧着する際の1回あたりの締付幅は、D51用の場合グリップジョイントが約45mm, TS式スリープジョイントが約35mm程度であり、両者とも油圧によって

ってきたが、いずれの継手についても静的試験のみで疲労に関する研究を行っていなかった。今回

形状が、グリップジョイントは円形²⁾、TS式スリープジョイントは6角形となっている(Fig. 2,

Table 4 Creep test results of Grip Joint

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4・2 試験結果と考察

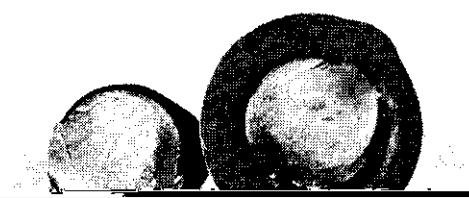
スリープ中央部の疲労亀裂発生点は、溶融金属の

4・2・1 ガス圧接継手

ガス圧接継手の疲労試験の結果を **Table 6** に、
両対数表示したものを **Fig. 7** に示す。ここで実
線は、試験結果を最小 2 乗法を用いて直線回帰し

け込み部にあつたりして一定でなく、試験結果に
ばらつきが大きいが、最小 2 乗法から求めた 200
万回疲労強度振幅は 12.2kg/mm^2 と推定され、素
材の 60% 強であった。





力 20kg/mm^2 ($\sigma_r = 18\text{kg/mm}^2$) に対する母材の抜け出しは若干生じるが、上限応力 20kg/mm^2 程度までは母材の抜け出しを考慮する必要はないものと思われる。ただし Fig. 12 に示すように、上限応力が 22kg/mm^2 以上の場合は繰返し回



る。

(3) スリープ長 300mm のカドウェルドスプラ

(6) スリープからの母材の抜け出しあは、上限応力を高くした場合繰返し回数とともに漸増す

と推定でき、素材の60%強である。

(4) スリープ長 250mm、締付圧力 750kg/cm^2 のグリップジョイントの 200 万回疲労強度振

スリープ継手などでは、破壊現象だけでなく繰返し応力によるスリープからの母材の抜け出しなども検討する必要がある。特に繰返し回数が多く