معهد لذي الناء



القواعد التطبيقية لاستعال الخرسانة سابقة الاجهاد

# HBRC

O' Alialla al Supil Based goadl is all the search Cent.

Since 1954

110

197.

معجمة النحايك البناء

القواعد التطبيقية لاستعال الخرسانة سابقة الاجهاد

1976 1974 1. 110 1876 1212 177

المركز القومي لبحوث الاسكان والبناء Housing & Building National Research Center

Since 1954

D.

## محمد أبحاث البناء

# BUILDING RESEARCH AND TRAILING CENTRE

القواعد التدابيقية لاستعمال المخرسانة سابقة الاجهاد

CODE OF PRACTICE For The Use of PRESTRESSED CONCRETE

المركز القومي لبحوث الاسكان والبناء Haffonal Research Cemer جارى سياغتها باللغة المربيسة Since 1954

مدير محهد أبحات البناء

NULL

دنتورعبد العزيزعيد الخالق طبح

#### Contents

#### I. - Introduction

```
- I
          Scope
   - 2
          Definitions
   - 3
          Notation
   - 4
         Generalities
         Relevent Specifications
                            2. - Materials
 55
   - J.
         Quality of Materials
   - 2
         Concrete
 SNONS
   - 3
         Control of Concrete Properties
   - 4
         Steel
  ... 5
         Control of Steel Properties
  -- 6
         Grout
  - 7
         Sheathing
                           3. - Design
        Fundamentals of Design
        Assumptions
33333333333333
   3
        Stages of Loading for Design ...
        Allowable Stresses in Concrete
        Safety against Cracking
        Allowable Stresses in Steel
        Shrinkage of Concrete
  - 8
        Creep of Concrete and Steel
  -
   9
        Friction
  - IO
        Allowance for Losses and Effective Prestress.
 - II
        Factors of Safety against Failure
 .. IS
        Shear and Torsion
 - I3
        Bond
 - I4
        Anchorage
 - I5
        Cover and Spacing of Prestressing Steel
 - I6
        Composite Construction
        Continuous Prestressed Concrete Structures
   17
   I8
       Buckling.
                          4. - Construction
       Introduction
       Workmanship of Concrete and Steel
       Application and Release of the Prestressing Force.
       Measurement of the Prestressing Force
       Crouting
       Acceptance Tests.
```

44

#### I. - Introduction

### I - I Scope

design and construction of prestressed concrete work which will result in structures that perform satisfactorily under working conditions, with an adequate ultimate load capacity and that can be designed economically. The specifications deal mainly with flexural members and are intended particularly to buildings and bridges. Other forms of construction shall be governed by special specifications.

## I - 2 Definitions

- (I) "Prestressed Concrete" denotes concrete in which effcctive internal stresses are induced, generally by the use of high tensile steel. This operation is done before or during the action of external loads and in such a way as to completely eliminate or at least to effectively reduce tensile stresses under the action of working loads together with the provision of an ample factor of safety against collapse.
- denotes the operation of tensioning the steel before the concrete has been casted. When the concrete is