

ARCH CAPITAL GROUP LTD.  
Form 8-A12B  
April 17, 2006

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549**

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**FORM 8-A**

**FOR REGISTRATION OF CERTAIN CLASSES OF SECURITIES  
PURSUANT TO SECTION 12(b) OR (g) OF THE  
SECURITIES EXCHANGE ACT OF 1934**

**Arch Capital Group Ltd.**

(Exact Name of Registrant as Specified in Its Charter)

**Bermuda**  
(State of Incorporation or Organization)

**Not Applicable**  
(I.R.S. Employer Identification no.)

**Wessex House, 45 Reid Street  
Hamilton HM 12, Bermuda**  
(Address of Principal Executive Offices)

**N/A**  
(Zip Code)

If this form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective upon filing pursuant to General Instruction A.(c), please check the following box.

If this form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective upon filing pursuant to General Instruction A.(d), please check the following box.

Securities Act registration statement file number to which this form relates: **333-117099**

Securities to be registered pursuant to Section 12(b) of the Act:

**Title of Each Class  
to be so Registered**  
8.00% Non-Cumulative Preferred  
Shares, Series A, \$0.01 par value

**Name of Each Exchange on Which  
Each Class is to be Registered**  
New York Stock Exchange

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Securities to be registered pursuant to Section 12(g) of the Act:

**None**  
(Title of Class)

**None**  
(Name of Exchange)

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ITEM 1. DESCRIPTION OF REGISTRANT'S SECURITIES TO BE REGISTERED

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For a description of the securities to be registered hereunder, reference is made to the information set forth under the heading "Description of the Series A Non-Cumulative Preferred Shares" in the Registrant's Prospectus Supplement, dated January 25, 2006, to the Prospectus, dated August 25, 2004, which constitutes a part of the Registrant's Registration Statement on Form S-3 (File No. 333-117099), filed under the Securities Act of 1933, as amended, which information is hereby incorporated herein by reference.

### ITEM 2. EXHIBITS

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- 3.1 Memorandum of Association of Arch Capital Group Ltd. (Incorporated by reference to Arch Capital Group Ltd. s registration statement on Form S-4 (File No. 333-45418), as filed with the SEC on September 26, 2000.)
- 3.2 Bye-laws of Arch Capital Group Ltd. (Incorporated by reference to Arch Capital Group Ltd. s registration statement on Form S-4 (File No. 333-45418), as filed with the SEC on September 26, 2000.)
- 3.3 Amended and Restated Bye-law 45 and Bye-law 75. (Incorporated by reference to the current report on Form 8-K of Arch Capital Group Ltd. (File No. 001-16209), as filed with the SEC on January 4, 2002.)
- 3.4 Certificate of Designations of 8.00% Non-Cumulative Preferred Shares, Series A. (Incorporated by reference to the current report on Form 8-K of Arch Capital Group Ltd. (File No. 001-16209), as filed with the SEC on February 2, 2006.)
- 4.1 Specimen 8.00% Non-Cumulative Preferred Shares, Series A, share certificate (Incorporated by reference to the current report of Arch Capital Group Ltd. s (File No. 001-16209), as filed with the SEC on February 2, 2006.)

SIGNATURE

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the Registrant has duly caused this Registration Statement or amendment thereto to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: April 17, 2006

ARCH CAPITAL GROUP LTD.

By: /s/ John D. Vollaro  
Name: John D. Vollaro  
Title: Executive Vice President and Chief  
Financial Officer