

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

FORM 11-K

(Mark One)

- ☒ **ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2009

OR

- ☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission file number 001-15885

**BRUSH ENGINEERED MATERIALS INC.
SAVINGS AND INVESTMENT PLAN**

(Full Title of the Plan)

BRUSH ENGINEERED MATERIALS INC.
6070 Parkland Blvd.
Mayfield Hts., Ohio 44124

(Name of issuer of the securities held
pursuant to the plan and the address
of its principal executive office.)

**Brush Engineered Materials Inc.
Savings and Investment Plan**

Required Information

Report of Independent Registered Public Accounting Firm	Page No. 1
Statements of Net Assets Available for Benefits — December 31, 2009 and 2008	2
Statement of Changes in Net Assets Available for Benefits — Year Ended December 31, 2009	3
Notes to Financial Statements	4-11
Schedule required to be filed under ERISA	
a. Schedule H, Line 4i, Schedule of Assets (Held at End of Year)	12
Signature	13
Exhibits	
23.1 Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm EX-23.1	14

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have audited the accompanying statements of net assets available for benefits of the Brush Engineered Materials Inc. Savings and Investment Plan as of December 31, 2009 and 2008, and the related statement of changes in net assets available for benefits for the year ended December 31, 2009. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Plan's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the Plan at December 31, 2009 and 2008, and the changes in its net assets available for benefits for the year ended December 31, 2009, in conformity with U.S. generally accepted accounting principles.

Our audits were performed for the purpose of forming an opinion on the financial statements taken as a whole. The accompanying supplemental schedule of assets (held at end of year) as of December 31, 2009 is presented for purposes of additional analysis and is not a required part of the financial statements but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. This supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in our audits of the financial statements and, in our opinion, is fairly stated in all material respects in relation to the financial statements taken as a whole.

/s/ Ernst & Young LLP

Cleveland, Ohio
June 22, 2010

**Brush Engineered Materials Inc.
Savings and Investment Plan
Statements of Net Assets Available for Benefits**

	December 31	
	2009	2008
Assets		
Investments	\$153,982,365	\$126,749,639
Contribution receivables:		
Employer	3,612	66,056
Participants	122,801	410,413
Total contribution receivables	126,413	476,469
Pending sales	173,830	219,711
Net assets available for benefits	<u>\$154,282,608</u>	<u>\$127,445,819</u>

See accompanying notes to financial statements.

Brush Engineered Materials Inc.
Savings and Investment Plan
Statement of Changes in Net Assets Available for Benefits
Year Ended December 31, 2009

Additions

Net investment income:	
Net appreciation in fair value of investments	\$ 27,458,878
Interest and dividends	2,940,834
Contributions:	
Participants	6,563,406
Employer	490,858
Catch-up	378,137
Rollover	418,130
Life Insurance	65,027
	<u>7,915,558</u>
Total additions	38,315,270

Deductions

Benefit payments	11,455,738
Administration fee	15,614
Defaulted loans	<u>7,129</u>
Total deductions	<u>11,478,481</u>
Net increase	26,836,789
Net assets available for benefits:	
Beginning of year	<u>127,445,819</u>
End of year	<u>\$154,282,608</u>

See accompanying notes to financial statements.

**Brush Engineered Materials Inc.
Savings and Investment Plan
Notes to Financial Statements
December 31, 2009 and 2008
and Year Ended December 31, 2009**

NOTE A — Description of the Plan

The following description of the Brush Engineered Materials Inc. Savings and Investment Plan (the “Plan”) provides only general information. Participants should refer to the Summary Plan Description for a more complete description of the Plan’s provisions.

General

The Plan is a defined contribution plan that covers certain eligible employees of Brush Engineered Materials Inc. (Company) and participating employers who have adopted the Plan (Company reference includes participating employers where appropriate). The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

Contributions

The Plan provides for basic contributions by employees of up to 6% of their earnings through pre-tax (salary reduction), Roth or after-tax contributions. At the beginning of the year, basic contributions were matched by the Company at the rate of 25% of such contributions. Effective April 4, 2009, the Company matching contributions were eliminated for those participants at locations covered under the defined benefit pension plan. The rate at which such basic contributions are matched by the Company may be decreased or increased (up to a 100% rate) by action of the Company’s Board of Directors.

An employee who makes basic contributions of 6% of earnings may also make supplemental contributions of up to 44% of earnings which are not matched by Company contributions and which may be made in any combination of pre-tax and/or after-tax contributions.

An employee’s contributions made to the Plan on a pre-tax basis may not exceed certain IRS maximum amounts. The maximum amount is \$16,500 in 2009. If an employee will be 50 or older by the end of the plan year, and is making the maximum elective contribution for the year, he/she may make additional pre-tax “catch-up” contributions of up to 75% of earnings. In 2009, the maximum amount for a catch-up contribution is \$5,500. Employees can also designate such contributions as being made on a Roth 401(k) basis under the Plan.

Currently, participants can direct, in increments of 1%, their basic, supplemental, rollover, catch-up, Company matching, and transfer contributions (as described in the Plan) to be invested in any of the fund options offered by the Plan. Participants can also transfer amounts between fund options on each investment change date.

The Company made PAYSOP contributions to the Plan for plan years 1984 through 1986.

**Brush Engineered Materials Inc.
Savings and Investment Plan
Notes to Financial Statements — Continued**

Vesting

All employee and Company contributions are fully vested at all times.

Participant Loans

A participant may borrow funds from his/her account, provided such loan is secured by 50% of the value of the participant's account immediately prior to the loan and evidenced by a promissory note executed by the participant.

Payment of Benefits

At retirement, death or other termination, a participant (or his death beneficiary) is eligible to receive a distribution of all employee and Company contributions credited to the employee's account plus or minus any net gain or loss thereon.

The value of distributions and withdrawals is based on the value of a participant's account on the valuation date immediately preceding the date of distribution or withdrawal and is deducted from the participant's account as of such valuation date.

Distribution to a participant or a person designated by the participant as his death beneficiary is made under one or more (as applicable) of the following methods as elected by the participant (or in certain cases the death beneficiary):

- (i) Lump sum payment in cash;
- (ii) Lump sum payment in cash, except that a participant's interest in the Company Stock Fund and the PAYSOP contributions account will be paid in full shares of Common Stock of the Company, with any fractional shares being paid in cash; and
- (iii) Periodic distributions, not more frequently than monthly, of at least \$200.

Insurance Policies

Prior to July 1, 1989, participants who were employees of Williams Advanced Materials Inc. could have directed a portion of their contributions to be used to purchase insurance policies that were excluded from the former Williams Advanced Materials Inc. Savings and Investment Plan assets. Life insurance policies on the lives of participants, purchased under the former Williams Advanced Materials Inc. Savings and Investment Plan prior to July 1, 1989, were surrendered during 2009 with the proceeds transferred to each individual participant's plan account.

Plan Termination

Although it has not expressed any intent to do so, the Company has the right under the Plan to terminate the Plan subject to the provisions of ERISA.

**Brush Engineered Materials Inc.
Savings and Investment Plan
Notes to Financial Statements — Continued**

Note B — Summary of Accounting Policies

Basis of Accounting

The financial statements of the Plan have been prepared on the accrual basis of accounting.

Investment Valuation

Investments are stated at fair value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). See Note I for further discussion of fair value measurements.

Purchases and sales of securities are recorded on a trade-date basis. Interest and dividend income is recorded on the accrual basis.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

**Brush Engineered Materials Inc.
Savings and Investment Plan
Notes to Financial Statements — Continued**

NOTE C — Investments

During 2009, the Plan's investments (including investments purchased, sold, as well as held during the year) appreciated in fair value as determined by quoted market prices as follows:

	Net Realized and Unrealized Appreciation in Fair Value of Investments
Brush Engineered Materials Inc. Common Stock	\$ 4,792,261
Equity securities	22,666,617
	<u>\$27,458,878</u>

Investments that represent 5% or more of fair value of the Plan's net assets are as follows:

	December 31 2009	2008
Brush Engineered Materials Inc. Common Stock	\$13,183,534	\$10,234,268
Fidelity Blue Chip Growth Fund	20,542,878	13,817,810
Fidelity Diversified International Fund	16,574,465	12,753,013
Fidelity Money Market Trust: Retirement Money Market Portfolio	19,545,987	23,926,443
PIMCO Total Return Fund	19,068,731	15,512,139
Spartan U.S. Equity Index Fund	13,328,752	10,906,344
Vanguard Asset Allocation Fund	8,237,572	7,271,980

NOTE D — Income Tax Status

The Plan has received a determination letter from the Internal Revenue Service dated April 8, 2010, stating that the Plan is qualified under Section 401(a) of the Internal Revenue Code (Code) and, therefore, the related trust is exempt from taxation. Subsequent to the issuance of the determination letter, the Plan was amended. Once qualified, the Plan is required to operate in conformity with the Code to maintain its qualification. The Plan Administrator believes the Plan is being operated in compliance with the applicable requirements of the Code and, therefore, believes that the Plan, as amended, is qualified and the related trust is tax exempt.

**Brush Engineered Materials Inc.
Savings and Investment Plan
Notes to Financial Statements — Continued**

NOTE E — Transactions with Parties-in-Interest

All legal and accounting expenses of the Plan are paid by the Company. All administrative fees are paid as noted above or pursuant to the trust by the Plan. Other than as described above, the Plan did not have any agreements or transactions with parties-in-interest.

During 2009, the Plan had the following transactions related to shares of Brush Engineered Materials Inc. Common Stock:

Purchases	\$14,974,707
Sales	16,578,936

NOTE F — Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the statements of net assets available for benefits.

NOTE G — Subsequent Event

Effective for pay periods beginning on and after April 3, 2010, the Company amended the Plan to increase the rate of employer matching contributions to 25%, except with respect to certain locations not covered by the Company's pension plan, where the employer matching contribution was increased to 50%.

Employees of the acquisition Barr Associates, Inc. entered into the Plan effective January 1, 2010. Employees of the acquisition Academy Corporation entered into the Plan effective May 1, 2010. On April 30, 2010, assets held by both acquisitions prior plans were merged into the Plan.

**Brush Engineered Materials Inc.
Savings and Investment Plan
Notes to Financial Statements — Continued**

NOTE H — Recent Accounting Pronouncements

In April 2009, the Financial Accounting Standards Board (FASB) issued FASB Staff Position 157-4, *Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly* (FSP 157-4). FSP 157-4 amended FASB Statement No. 157 (codified as ASC 820) to provide additional guidance on estimating fair value when the volume and level of activity for an asset or liability have significantly decreased in relation to its normal market activity. FSP 157-4 also provided additional guidance on circumstances that may indicate that a transaction is not orderly and on defining major categories of debt and equity securities to comply with the disclosure requirements of ASC 820. The Plan adopted the guidance in FSP 157-4 for the reporting period ended December 31, 2009. Adoption of FSP 157-4 did not have a material effect on the Plan's net assets available for benefits or its changes in net assets available for benefits.

In September 2009, the FASB issued Accounting Standards Update 2009-12, *Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)* (ASU 2009-12). ASU 2009-12 amended ASC 820 to allow entities to use net asset value (NAV) per share (or its equivalent), as a practical expedient, to measure fair value when the investment does not have a readily determinable fair value and the net asset value is calculated in a manner consistent with investment company accounting. The Plan adopted the guidance in ASU 2009-12 for the reporting period ended December 31, 2009 and has utilized the practical expedient to measure the fair value of investments within the scope of this guidance based on the investment's NAV. In addition, as a result of adopting ASU 2009-12, the Plan has provided additional disclosures regarding the nature and risks of investments within the scope of this guidance. Refer to Note I for these disclosures. Adoption of ASU 2009-12 did not have a material effect on the Plan's net assets available for benefits or its changes in net assets available for benefits.

In January 2010, the FASB issued Accounting Standards Update 2010-06, *Improving Disclosures about Fair Value Measurements*, (ASU 2010-06). ASU 2010-06 amended ASC 820 to clarify certain existing fair value disclosures and require a number of additional disclosures. The guidance in ASU 2010-06 clarified that disclosures should be presented separately for each "class" of assets and liabilities measured at fair value and provided guidance on how to determine the appropriate classes of assets and liabilities to be presented. ASU 2010-06 also clarified the requirement for entities to disclose information about both the valuation techniques and inputs used in estimating Level 2 and Level 3 fair value measurements. In addition, ASU 2010-06 introduced new requirements to disclose the amounts (on a gross basis) and reasons for any significant transfers between Levels 1, 2 and 3 of the fair value hierarchy and present information regarding the purchases, sales, issuances and settlements of Level 3 assets and liabilities on a gross basis. With the exception of the requirement to present changes in Level 3 measurements on a gross basis, which is delayed until 2011, the guidance in ASU 2010-06 becomes effective for reporting periods beginning after December 15, 2009. Plan management is currently evaluating the effect that the provisions of ASU 2010-06 will have on the Plan's financial statements.

**Brush Engineered Materials Inc.
Savings and Investment Plan
Notes to Financial Statements — Continued**

NOTE I — Fair Value Measurements

FASB Statement No. 157 (codified as ASC 820) defines fair value as the price that would be received to sell an asset or paid to transfer a liability (exit price) regardless of whether an observable liquid market price exists.

ASC 820 establishes a fair value hierarchy that categorizes the inputs to valuation techniques that are used to measure fair value into three levels:

- Level 1 Observable inputs which reflect quoted prices for identical assets or liabilities in active markets at the measurement date.
- Level 2 Observable inputs for assets or liabilities other than quoted prices included in Level 1 and it includes valuation techniques which use prices for similar assets and liabilities.
- Level 3 Unobservable inputs which reflect the reporting entity's estimates of the assumptions that market participants would use in pricing the asset or liability, including assumptions about risk.

The asset's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

The following is a description of the valuation methods used for assets measured at fair value. There have been no changes in methodologies used at December 31, 2009.

Brush Engineered Materials Inc. Common Stock: The fair values of these securities are based on observable market quotations for identical assets and are valued at the closing price reported on the active market on which the individual securities are traded.

Equity securities: The fair values of these securities are based on observable market quotations for identical assets and are priced on a daily basis at the close of business.

Interest bearing cash: Valued at the net asset value (NAV) of shares held by the plan at year end.

Participant loans: Valued at their outstanding balances, which approximates fair value.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Plan believes its valuations methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement.

**Brush Engineered Materials Inc.
Savings and Investment Plan
Notes to Financial Statements — Continued**

The following table sets forth by level, within the fair value hierarchy, the Plan's assets at fair value as of December 31, 2009:

	Level 1	Level 2	Level 3	Total
Brush Engineered Materials Inc.				
Common Stock	\$ 13,183,534	\$ —	\$ —	\$ 13,183,534
Equity securities				
U.S. (a)	99,200,328	—	—	99,200,328
International (b)	16,574,465	—	—	16,574,465
Interest bearing cash (c)	21,189,747	—	—	21,189,747
Participant loans	—	—	3,834,291	3,834,291
Total investments	<u>\$150,148,075</u>	<u>\$ —</u>	<u>\$3,834,291</u>	<u>\$153,982,365</u>

- (a) Mutual funds that invest in various sectors of the U.S. market.
- (b) Mutual funds that invest in non-U.S. companies primarily in developed countries that are generally considered to be value stocks.
- (c) Money market funds that invest in U.S. dollar denominated securities with an income objective that seeks to preserve the value of the investment at \$1.00 per share.

For participant loans measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during 2009, a reconciliation of the beginning and ending balances is as follows:

	Participant Loans
Beginning balance, January 1, 2009	\$3,923,360
Purchases, sales, issuances and settlements (net)	(89,069)
Ending balance, December 31, 2009	<u>\$3,834,291</u>

Table of Contents

**Brush Engineered Materials Inc.
Savings and Investment Plan
EIN: 34-1919973 Plan Number — 003
Schedule H, Line 4i
Schedule of Assets (Held at End of Year)
December 31, 2009**

Identity of Issue	Description of Investment	Current Value
Brush Engineered Materials Inc. Common Stock *	711,086.000 shares	\$ 13,183,534
Equity securities:		
DFA U.S. Large Cap Value Fund	430,139.686 shares	7,338,183
Fidelity Blue Chip Growth Fund*	541,314.299 shares	20,542,878
Fidelity Diversified International Fund*	591,945.171 shares	16,574,465
Fidelity Freedom 2000 Fund*	18,579.743 shares	210,880
Fidelity Freedom 2005 Fund*	23,811.806 shares	238,832
Fidelity Freedom 2010 Fund*	265,199.351 shares	3,317,644
Fidelity Freedom 2015 Fund*	203,104.727 shares	2,116,351
Fidelity Freedom 2020 Fund*	377,136.945 shares	4,733,069
Fidelity Freedom 2025 Fund*	207,964.552 shares	2,160,752
Fidelity Freedom 2030 Fund*	173,355.508 shares	2,147,875
Fidelity Freedom 2035 Fund*	93,023.653 shares	954,423
Fidelity Freedom 2040 Fund*	207,736.396 shares	1,487,393
Fidelity Freedom 2045 Fund*	20,005.663 shares	169,448
Fidelity Freedom 2050 Fund*	22,687.879 shares	189,444
Fidelity Freedom Income Fund*	62,987.529 shares	676,486
Harbor Small Cap Value Institutional Class	125,245.793 shares	2,046,516
Morgan Stanley Institutional Fund, Inc. Small Company Growth Portfolio Class	P241,924.762 shares	2,530,533
PIMCO Total Return Fund Administrative Class	1,765,623.205 shares	19,068,731
Spartan U.S. Equity Index Fund	338,035.804 shares	13,328,752
Third Avenue Real Estate Value Fund	121,198.580 shares	2,479,723
Vanguard Asset Allocation Fund	382,609.003 shares	8,237,572
Vanguard Mid Capitalization Index Signal Fund	222,998.096 shares	5,224,845
		115,774,793
Interest bearing cash:		
Fidelity Employee Benefits Money Market Fund*	701,878.690 shares	701,879
Fidelity Money Market Trust: Retirement Money Market Portfolio*	19,545,986.760 shares	19,545,987

Fidelity U.S. Treasury Money Market Fund*	941,881.730 shares	<u>941,882</u>
		21,189,747
Participant loans *	Interest rates ranging from 1.25% to 5.08% with maturity dates through 2025	<u>3,834,291</u>
		<u>\$ 153,982,365</u>

* Party-in-interest to the Plan.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed on its behalf by the undersigned thereunto duly authorized.

BRUSH ENGINEERED MATERIALS INC.
SAVINGS AND INVESTMENT PLAN

Date: June 25, 2010

By: /s/ Michael C. Hasychak
Michael C. Hasychak
Vice President, Treasurer and Secretary
Brush Engineered Materials Inc.

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 33-363351) pertaining to the Savings and Investment Plan of Brush Engineered Materials Inc. of our report dated June 22, 2010, with respect to the financial statements and schedule of the Brush Engineered Materials Inc. Savings and Investment Plan included in this Annual Report (Form 11-K) for the year ended December 31, 2009.

/s/ Ernst & Young LLP
Cleveland, Ohio
June 22, 2010